

THE MOTOR AGE

THE AUTOMOBILE AUTHORITY.

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Price 5 Cents

CHICAGO NOV. 14, 1901

Vol. V. No. 10

Packards

Are built for combined *reliability* and *speed* over any roads. Ask the man who owns one. Our machines can and do *prove their efficiency* in every detail. Descriptive catalogue free. :: ::
We shall exhibit at the New York show. :: :: ::

OHIO AUTOMOBILE CO.,

Warren, Ohio.

New Kelly Generator

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Improved—Perfect in Every Way



Drip cup unnecessary in starting—Aluminum case over generator—All connections on the outside—Strongly made—Easily adjusted—No flaring or flashing in lighting, even in strong wind. A quick and powerful generator—Main fire valve controlled at seat—Small and neat in appearance and adapted for any machine.

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... THE OFFICIAL ...

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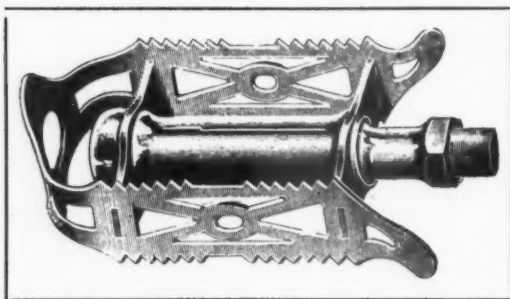
Much other useful information too varied for mention.

Official Automobile Blue Book Company,

22 Burling Slip

New York City

Genesee Pedals



Known—And Well Renown—

Used of Old—By All Extolled

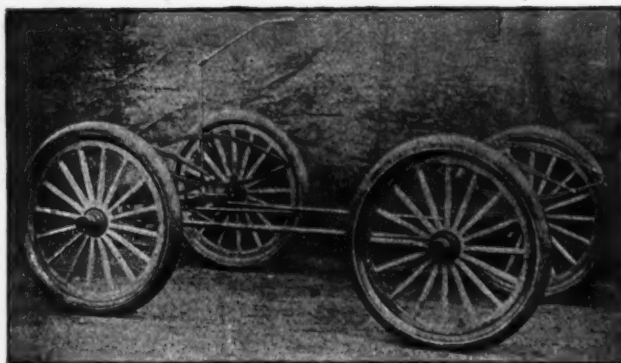
JOHN R. KEIM,

-

Buffalo, N. Y.



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Get a running gear that is past the experimental stage and build a **SUCCESSFUL AUTOMOBILE**

We make two styles complete with springs and wood wheels, solid rubber or pneumatic tires.

OUR SPRING BLOCK BEARING IS SELF-ADJUSTING

and you ought to have it. It is made for revolving axles and is pivoted between the bearing and spring block, enabling the bearing to move free and easy with the axle always. Our catalogue tells all about it.

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Is Justified by Actual Demonstration

It has carried off the honors wherever shown. Not alone the best by performance but conceded the handsomest, most graceful, easiest controlled and most reliable American built carriage.

First of gasoline vehicles, Merrick Road, March, 1900.

Blue Ribbon—Long Island Endurance Test, April, 1901.

First prize, Guttenburg, N. J., September, 1900.

Winner of every contest for gasoline vehicles at New York and Philadelphia automobile shows. These contests include starting, stopping and obstacle events.

First prize, Newport, September, 1901.

NEW YORK-BUFFALO ENDURANCE RUN—Two first class certificates.

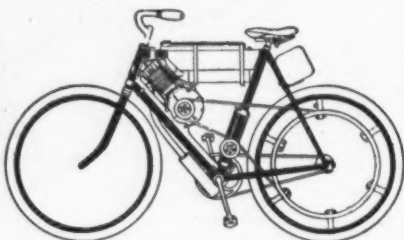
Silver Cup, Providence, October 18, 1901.

AWARDED GOLD MEDAL, PAN-AMERICAN EXPOSITION

Automobile Company of America, 135 Broadway, **NEW YORK.**

Factory: Marlon (Jersey City) N. J.

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AUTO-BI



Go to any country you will in this world—Go through the United States and Canada—Go to Mexico, Yucatan, Cuba, Porto Rica, Bermuda, Trinidad, Hawaiian Islands, Great Britain, Netherlands, Holland, Russia, Germany, France, So. Africa, India, Japan, China, Java, Strait Settlement, New Zealand—all of the Australias—travel in any of these countries and you will find the **AUTO-BI**.

When you are asked for the best Motor Bicycle you know what to reply. The above is some of the evidence.

AUTO-BI COMPANY,

106 Broadway, - - - Buffalo, N. Y

We Use Thomas Motors Exclusively.

**STAR, RECORD,
BRIDGEPORT**

Pedals

Special Announcement. 1902

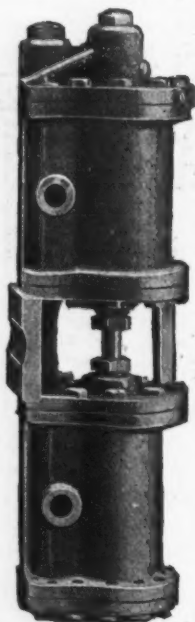
MODELS NOW READY.

Send for quotations. :: ::



**The Bridgeport Gun
Implement Co.**

313-317 Broadway, NEW YORK



Victor Steam Air AND Steam Water Pumps

Space required in carriage 9 inches in height by 3 inches in width. Weight 4½ pounds each. Steam pistons 1½ inches in diameter by 2-inch stroke. Water pump piston 1 inch in diameter by 2-inch stroke. Capacity of water pump 1½ gallons of water per minute against 200 pounds boiler pressure. Air pump piston 1½ inches in diameter by 2-inch stroke. Capacity of air pump 80 pounds pressure on fuel tanks or tires. Pipe connections ½-inch.

OVERMAN AUTOMOBILE COMPANY,

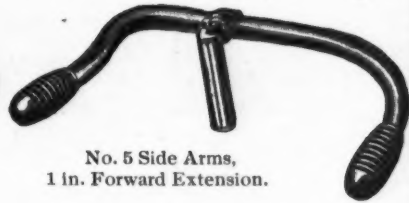
Room 99, 81 Fulton Street, NEW YORK.

1902 Kelly Adjustable Handle Bars

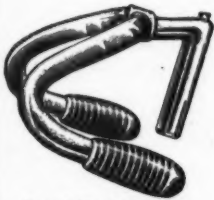
STANDARD BARS OF THE WORLD



No. 3 Arms, Regular Stem.



No. 5 Side Arms,
1 in. Forward Extension.



No. 4 Racing Arms,
2 1/2 in Forward Extension

It will pay all manufacturers these times when competition is hot, to see that their wheels are equipped with just the attachments demanded by the rider. Every rider knows the merits of KELLY BARS, as they have been for the past six years the most popular and foremost sundry in the cycle trade.

The Kelly Handle Bar Co. CLEVELAND, O.
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THE FLYING-MACHINE

Of the 20th Century



IS THE

Mitchell Motorcycle

Workmanship and finish of the highest grade obtainable. Forks, rims and tires built extra strong and adapted to hard and constant usage. Every Mitchell machine goes out under a positive guarantee. Send for our catalogue and learn all about it.

WISCONSIN WHEEL WORKS,

Dept. M Racine Junction,

Wisconsin.



G & J TIRES

FOR AUTOMOBILES

are detachable, double tube tires. An occasional puncture is inevitable in any tire. Any one can repair a G & J Automobile Tire easily and permanently.

G & J TIRE CO.

INDIANAPOLIS, IND.

A Fluke

May cause a motor vehicle to make a good showing on a single occasion, but when an automobile stands up and wins five days in succession, it most certainly demonstrates the absence of accidental victory. And when four vehicles stand up and win five days in succession, covering each nearly one hundred miles in a day and being awarded the highest honors at the finish, the charge cannot be supported, in the minds of reasonable men, that the triumph was not brought about by intrinsic merit.

Four first awards were given four WHITE steam carriages for their work in the New York to Buffalo Endurance Contest, promoted by the Automobile Club of America, whose official report can be secured from us, free of charge, upon request. Get a copy and draw your own conclusions from its recitals.

White Sewing Machine Co.

(Auto Dept.)

CLEVELAND, OHIO.

...NOTE...

There will be a special exhibit of White steam carriages at the New York branch office of the White Sewing Machine Co., 22 Union Square, where all interested parties are cordially invited to call and inspect the vehicles.

...BRANCHES...

22 Union Square, New York, N.Y. 509 Tremont St., Boston, Mass. 212 Woodward Ave, Detroit, Mich.
300 Post Street, San Francisco, Cal. 609 Main Street, Buffalo, N. Y.

CURRENT NOTES AND COMMENTS

New York, Nov. 7.—A nominating committee of the Automobile Club of America, as is required by the by-laws, has announced the following regular ticket for the coming election: Albert R. Shattuck, for president; Gen. George Moore Smith, for first vice president; Edwin Gould, for second vice president; Harry Payne Whitney, for third vice president; Jefferson Seligman, for treasurer; Winthrop E. Searritt, James L. Breeze and Albert C. Bostwick, for governors. S. M. Butler, the present incumbent, it goes without saying, will be appointed secretary by the governors under the new rule.

Climbing Eagle Rock Hill

Newark, N. J., Nov. 5.—Eagle Rock, at Orange, famous in the early days of the bicycle as furnishing the supreme test for all crack hill climbers, is likely to be as famous also in similar contests of the motor vehicle. The Automobile Club of New Jersey inaugurated the new game today by a hill-climbing contest, in which a baker's dozen of riders using eight well known makes competed. Eagle Rock is about a mile in length, three-quarters of the way a stiff climb, winding up with a sharp 18 per cent rise to the finish. The event, under the main direction of Kirk Brown, who acted as starter, was so successfully conducted and the long macadam surfaced hill is so well adapted to these tests that it is probable that this is but the beginning of a series of such trials.

W. J. Stewart and his Locomobile proved victorious in the steam class over B. L. Wright and his Grout, and in fact over all the vehicles at large. His time was 2:43, which beats the next best climb of the hill by 10 seconds. Mr. Stewart has never been beaten in any contest he has entered. He won the braking contest and the 5-mile steam race at Guttenburg last year and also the Mt. Holly cup. Mr. Wright wanted another climb at once for a hundred-dollar bet, but Mr. Stewart declined.

The gasoline victory fell to Charles E. Duryea, whose unofficial climb of Nelson hill during the endurance run was men-

tioned with commendation by Motor Age at the time. J. M. Schmidt in a De Dion was second in this class. The results follow:

W. J. Stewart, A. C. N. J., Locomobile, 2:43; B. L. Wright, Orange, Mass., Grout, 2:57; C. E. Duryea, Reading, Pa., Duryea, 3:54 1-5; W. H. Stebbins, Toledo, Toledo, 4:19 2-5; A. Schwartzbach, A. C. N. J., Reading, 4:53 2-5; O. L. Simpson, New York, Locomobile, 4:55 2-5; J. M. Schmidt, A. C. N. J., De Dion, 5:45; W. R. Royce, A. C. N. J., Locomobile, 6:25; Thomas McCarthy, Montclair, N. J., Winton, 7:53 1-5; William Weller, Newark, N. J., Locomobile, 8:36 2-5; H. W. Whipple, A. C. N. J., Packard, 8:37 3-5; J. Leibhardt, Newark, N. J., Locomobile, 8:55.

Space at Chicago Show

The first allotment of space at the Chicago show, which takes place at the Coliseum, March 1 to 8, will be made on Friday of this week. The applications in hand overflow the center, and it will be impossible to accommodate all who have asked for space there. The prospects are that nearly the entire space outside of the track, in the main building, will be occupied by automobiles.

The Mobile company has asked for the same space, it occupied last year, and the Locomobile company for the corresponding space at the other end of the same row. Across the aisle the ends have been applied for by the Electric Vehicle Co. and the Bachel Automoblie Co. Each of these spaces aggregates 1,500 square feet. The American Bicycle Co. has applied for the largest space, a block of six, embracing a little over 2,000 feet. Ralph Temple wants the corresponding space on the other side of the aisle for the National Vehicle Co., Olds Motor Works, White Sewing Machine Co. and U. S. Long Distance Automobile Co. Other applicants for large spaces are the Winton company, DeDion, Overman, Steamobile and Milwaukee. Makers of tires, sundries and parts are represented by the Badger Brass Co., Veeder Mfg. Co., New York Belting & Packing Co., B. F. Good-

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rich Co., Goodyear Tire & Rubber Co., Hartford Rubber Works Co., P. J. Dasey & Co., Ralph Temple, Holley Motor Co. and K. F. Peterson.

The difficulty under which the management will labor will be the impossibility of allotting the space asked for by a great many prospective exhibitors. The makers have evidently made up their minds that the Chicago show shall be one of unprecedented magnitude.

To Make the Stevens-Duryea

All of the machinery of the Hampden Automobile & Launch Co., of Springfield, Mass., has been moved into the factory of the Stevens Arms & Tool Co., of Chicopee Falls, Mass., and there, in future, the automobiles designed by Frank Duryea will be made under the name of the Stevens-Duryea. The Stevens company, as its name implies, makes firearms. About 18 months ago it bought the factory of the Overman Wheel Co., and added the manufacture of bicycles to its other lines, without, however, doing very much in that line. Negotiations were opened with Duryea a few weeks ago with the result stated. Duryea has long been looking for a good factory and an abundance of capital to make his machines. The Stevens company possesses both. The plant is one of the finest in the world.

Everything Goes to Hartford

The Elizabethport factory of the Electric Vehicle Co., or in other words, the Riker plant, is to be closed if it has not been closed already. President George H. Day has planned a policy of concentration, under which the entire affairs of the company will be conducted at Hartford, which city is the president's home. A few of the heads of departments will move to Hartford and the force of workmen will be gradually increased. Practically the entire office force now employed at New York will move to Hartford and will occupy the offices of the company's building at Park and Laurel streets.

At the same time the splendid office building of the Columbia sales department of the American Bicycle Co. is being dismantled and such of the employees as are needed are moving to New York, where the office force is to be concentrated. The building in which, by the way, Mr. Day spent all of his

business hours for nearly a quarter of a century was offered him for the staff of the Electric Vehicle Co., but it was found that the latter had sufficient room in its own building.

Around the Columbia plant centers the history of the cycle trade of the United States. The place was formerly the property of the Weed Sewing Machine Co., of which George H. Day was president. In 1877 the first Columbia bicycle was built there for Colonel Pope, and about seven years later the cycle trade had grown to such an extent that the colonel bought the plant, Mr. Day, however, holding considerable of the stock. The latter remained with the Pope company as vice president and general manager until the formation of the automobile company owned largely by the same interests, of which he took charge. The purchase of this business and its amalgamation with others is modern history. After a period of about 2 years Mr. Day returns to the scene of his early experience in the automobile line and to the city in which it may be said that almost his entire business career has been spent.

Vanderbilt on Automobile Prices

Discussing the prices paid for automobiles, Mr. Vanderbilt is quoted as having said: "There has been a lot of nonsense written about the high cost of foreign automobiles. My Mercedes machine here, which some people call the 'Red Devil,' cost me about \$5,000, duty paid, delivered in America. It has been stated that I paid \$20,000 for the machine when, as a matter of fact, I paid about \$3,500, plus 45 per cent duty. I sold a similar machine to this which cost me about \$5,000, for \$8,000, which shows that it pays to buy a well-made article."

Trials of the British Motorist

It will be interesting to note how long the British public will submit to the disgusting officiousness of the yokel police of the suburban districts. Almost every member of the automobile press gives more or less space to apparently vain complaints of the petty interference of the provincial constabulary. The trouble seems to be increasing rather than on the wane. Many hitherto favorite roads of the London automobilists have been practically abandoned and

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the proprietors of many erstwhile popular resorts are complaining bitterly of the loss of business on that account.

A favorite pastime of the rural "cops" is for one or two of them to disguise themselves as yokels, probably not a difficult undertaking, and take their place on some unfrequented road at a point whence the road slopes away in a smooth, gentle, down grade and consequently an almost irresistible temptation to "let 'er out." When the unwary automobilist goes by the first man signals his comrade, hidden behind a fence or other cover some distance farther along the road, who waylays the autoist and takes him before the nearby magistrate, who fines him with much dignity and enthusiasm.

The ability of these upholders of the law to estimate the speed is simply wonderful. Recently a gentleman well known as one of the most expert London chaffeurs was arrested while accompanied by a gentleman who was carefully timing each mile and

who declared on oath that the particular mile which they were charged with running under the legal limit was negotiated at the rate of 8 miles per hour, and two eye witnesses verified the statement, but the officious bobby claimed that he had timed them at the rate of 153 miles per hour. The judge finally let him go. Others, however, were not so fortunate, and a gentleman who went out for the avowed purpose of testing the timing abilities of the police was arrested and fined in spite of the assertions of himself and companion that they had not exceeded the legal limit. In another case an automobilist was fined on the statement of two officers who were stationed a mile apart and had taken his time at passing and compared times, in the face of the fact that on comparing the watches there was found to be over a minute difference between them which, if deducted, would have let the driver within the legal time. About the worst case on record, however, is that



FOURNIER OPERATING A TOLEDO STEAM CARRIAGE.

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of Sir Charles Lawes, who was arrested and on complaining that he had been previously fined £3 on a similar charge was promptly assessed the limit of £10 on the grounds of a second offense.

In one district particularly infested the owners of motor vehicles have organized themselves into what they term the Brighton Road Motor Patrol and are working in opposition to the local police and have discovered several cases where horses, in several instances attached to wagons loaded with easily destructible articles, have been left unattended in the way of expected automobiles in the hope that they might break away and give the owner a chance for a damage claim. This condition of affairs is seriously injuring the industry as well as many who are indirectly interested, but there seems as yet to be no way of bettering the condition, as the police look on "stalking" autoists as great sport and the fines come in handy to the country towns, even if the inn-keepers and others do lose in the transaction.

A Protest at Providence

An interesting question has arisen in connection with the open race at the late Providence meeting. There was an event open to vehicles of all classes, and Skinner, with his motor tricycle, won it. A protest was entered on the ground that a motor tricycle was not an automobile and the club decided to hold the prizes pending a decision by the Automobile Club of America. That body has since decided that motorcycles shall not be permitted to compete with automobiles.

This ruling, however, had not been made at the time of the races, nor does it seem to enter into the merits of the case. The programme made no stipulation as to the class of vehicles which should take part in the race. Skinner's entry was accepted and he was permitted to compete. It would be manifestly unfair, therefore, to make a rule to fit the case after Skinner had won the race and complied with all the conditions imposed upon competitors up to that time.

The Events at Cincinnati

Entry blanks for the Cincinnati races, which take place on Nov. 23, are ready and may be obtained of Rutherford H. Cox, 30 West Seventh street, Cincinnati, or at the

office of MOTOR AGE. The events are as follows:

Steam stock carriages; distance 5 miles; first prize, \$100 cup; second prize, \$50 cup.

Gasoline carriages of 12-horsepower and below; distance, 5 miles; first prize, \$100 cup; second prize, \$50 cup.

Ten miles against time; Fournier will try to beat the world's record.

Gasoline carriages of from 12 to 20 horse power; distance, 5 miles; first prize, \$100 cup; second prize, \$50 cup.

Open for all; distance, 15 miles; first prize, \$250 cup; second prize, \$100 cup. In this race Fournier will challenge the world.

Shaws Will Tour Europe

Mr. and Mrs. Robert Shaw and Mr. and Mrs. Walton Shaw will leave Chicago late in the month for New York, whence they will sail on the 29th for Paris. It is their intention to there purchase two Panhards and spend 2 months, at least, touring. They expect to spend 2 weeks in Spain, return to Marseilles and then go to Nice. Next they will visit Italy and, leaving their machines there, will go to Egypt, where they expect to stay about 2 weeks, returning to Nice in time for the flower carnival on Feb. 14. After that they will visit Austria and Germany, returning by way of Paris and reaching Chicago about the first week in April. They will be accompanied by a chauffeur, who goes with them from this side, and who is thoroughly acquainted with the automobile business in France.

Railway President on Fournier's Suit

The president of the Long Island railroad, whose train smashed the automobile of Fournier and injured several of his companions, does not seem to have much fear of the result of the suit brought against the company by Fournier. He gives the following reasons for believing that the company was not responsible:

"The railroad company operated this engine regularly every day on the regular schedule under a regular train number. The engineer was competent and careful. He sounded his crossing whistle. As he approached this crossing, the bell on the locomotive was ringing. The crossing bell commenced to ring when the engine was a

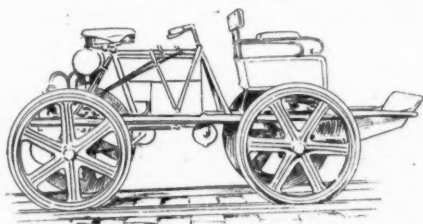
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quarter of a mile from the crossing. These are not statements of the railroad company alone. They are substantiated by twenty-five or thirty reputable people. The crossing bell was plainly heard by people several hundred feet away.

"These gentlemen approached this crossing knowing that it was a steam railroad crossing. They had been over it before that very day. As they came up to the tracks they were confronted by one of the large new crossing signs warning them to look out for trains and to 'stop.' The locomotive having sounded the crossing whistle was approaching with the bell ringing, the crossing bell was ringing, the automobilists came on without stopping, looking or listening. It is said that the view was obstructed. If so, these gentlemen knew that fact. The nearest house is, I am informed, about 37 feet from the track and a glance to the west would take in the tracks for half a mile."

De Dion's Machine for Railroad Use

The De Dion company, of France, has constructed a machine designed for railroad use. It is fitted with the regulation $3\frac{1}{2}$ -horsepower motor of the company's make. The frame is tubular and the transmission of power is by bevel gears. The wheels are of aluminum, bound by a steel tire. Two brakes are applied, working on the hubs. They can be operated singly or together, by one or two persons, and it



is possible to stop the wheels instantly, at no matter what speed the machine may be traveling. The operator sits behind and in front there is room for two persons or a trunk. The total weight is about 660 pounds.

Exports of Motor Vehicles

Washington, D. C., Nov. 6.—The following are the exports of motor vehicles and parts of same from New York for the week just ended:

Argentine Republic, motor vehicles and

material, \$21,062; Bremen, automobile, \$1,000; Hamburg, auto vehicles, \$2,100; London, motor vehicles and parts, \$6,200; Mexico, auto vehicles, \$2,270; New Zealand, motor, \$270.

Another Experience With Gasoline

W. F. Cochrane, a MOTOR AGE subscriber at Macleod, Alta., Canada, writes as follows: "I note letter from Will U. Martin, in your issue of Oct. 24, relative to 76 de-



gree gasoline which he does not find so good as Standard Oil Co.'s D. S. gasoline. I get a little better results from 76 than he does. I get it from the Imperial Oil Co., of Sarnia, and make about 10 miles to the gallon over prairie trails with my No. 5 Locosurrey, under favorable conditions. I had my trap out shooting the other day from 11 a. m. to 6 p. m., driving all over the prairie, around lakes, etc., up and down hill and over the grass, shooting ducks and prairie chickens. I enclose picture of the party."

Automobiles and Heavy Traffic

The Chicago Chronicle, one of the dailies which makes frequent reference to automobiles without trying to lead its readers to the false belief that they will shortly become as cheap as bicycles, speaks hopefully of the future of the vehicle for heavy traffic. The horse, it says, always will be the noblest, the most useful and the most delightful animal servant and companion of man. But in a great, crowded, busy city he is in the way if used for common heavy street traffic. Automobile freight wagons should be constructed at a reasonable cost which

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would take the place of all the traffic vehicles now used on the streets. An auto-traction vehicle would occupy only one-half the room on the streets occupied by a two-horse vehicle carrying freight. It would occupy only one-third the street space which a four-horse freight vehicle occupies. With a trained operator a heavy auto-traction vehicle would be far safer for pedestrians than a wagon drawn by horses at the crossings and wherever a citizen on foot is compelled to use the street instead of the sidewalk. The immense teaming operations in a city as large as Chicago fill the streets with wagons which occupy more than their rightful share of the public property and are an hourly menace to the public safety. Reform in the general traffic of the streets is needed as much as it is needed in street car transportation.

A great coal wagon, often drawn by three or four horses, takes up as much space in the streets as two or three coal wagons should monopolize. If each coal wagon or Leer wagon or express wagon contained its own propelling force like an automobile it would occupy only the space in the streets to which it would be entitled. There would be double or treble the room for other vehicles and the constant peril to pedestrians would be materially abated.

Automobiles are so constructed that they solve the wide-tire problem. The present narrow tires of the freight wagons destroy the pavements which have cost the taxpayers millions of dollars. The wide tires with which automobiles are equipped, if used on freight vehicles, would extend the life of the pavements for many years. There should be no delay in applying the autotraction system to all the traffic vehicles used on the streets. It is quite as much needed for light express wagons as it is for heavy traffic.

Shelby Men in New Company

A new corporation which promises to prove a big factor in the automobile business is the Miller, Thornburgh Co., of 135 Broadway, New York. This company will handle every variety of iron and steel product. The officers of the company were all until recently, associated with the Shelby Tube Co. W. E. Miller, president of the new concern, was formerly president of the Shelby company. L. B. Thornburgh,

treasurer, and E. A. Miller, secretary, were eastern representatives, and A. A. Kaiser, a member of the new corporation, was treasurer of the Shelby concern.

Enthusiasm in San Francisco

They are automobiling regularly, vigorously and in great numbers out in San Francisco. And this despite the fact that they are a year behind Chicago and 2 years behind New York in the models presented for the approval of prospective purchasers.

Practically all the vehicles used on the coast are propelled by steam. There are two reasons for this, one being that no one has yet attempted to introduce any of the big gasolines and the other that the people are doubtful about the ability of anything but steam to drive the machines up the hills. The last mentioned reason applies particularly to the neighborhood of 'Frisco. One of the largest dealers in cycles, who is now figuring on the automobile business, has operated a steam machine for the last 18 months, but when in Chicago a week or two ago, his great ambition was to get a ride in one of the big Panhards before returning. He got it.

Some idea of the enthusiasm with which San Francisco people turn out may be gathered from the picture, which represents the crowd on a late excursion. There are several people in the party who are well known in the east, notably W. C. Anderson, the Mobile company's western representative, who is operating the machine in the second row next to the left end, and with him Ed. Eager, of Toledo, who is on the coast temporarily representing one of the tire companies. Directly in front of them, the last vehicle to the left in the front row, sits Bob Lennie, well known for many years as one of the representatives of a tire house. A large majority of the machines are Locomobiles.

The last run was by moonlight and twenty machines took part. They went to the Cliff House, where the drivers held a meeting and discussed ways and means of obtaining more rights than they now enjoy in Golden Gate Park. If the advice of some of the members had been taken they would have invaded the park in a body and tested the right of the commissioners to exclude them. The matter was taken

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up by the club at its last meeting, and action deferred until the return of the president, who was in the east.

Automobiles Become Tired

As has already been shown by this paper, too many of the dailies are willing to report and exaggerate the troubles of automobilists. The Cleveland Plaindealer seems to be an exception. In a late issue it makes some comparisons between the automobile and the railroad train which are interesting. "No sooner does a part of a motor vehicle break," it says, "than the owner of it raises his voice in loud lament over the poorness of the material, which the owner claims was alone responsible for the break. Often this is not true. The overtaxed metal has simply been given no chance to rest, and has been forced to collapse.

"It may sound strange to hear persons talk about a 'tired steel axle,' or a 'fatigued iron rail,' but that sort of talk is heard along railways and in machine shops, and is considered correct. 'The idea of inanimate material becoming weary!' may be your thought, but experts familiar with the ways of machinery say that work makes it tired, and that it needs rest, as you do.

"What caused the axle to break?" asks the railway superintendent.

"Fatigue of the metal," answers the inspector.

"That answer is frequent, and often in accordance with the facts. At times an

axle breaks or a rail parts or a wheel separates under much less than the usual strain, and the most careful examination possible will show no defect or weakness. This leads engineers to charge fatigue of the metal with the result.

"Sinews of steel can tire as well as muscles of brawn, and metal parts of a vehicle that do not have their rest will cease to do their work, and may cause great damage. At least so the engineers say, and assert that without rest the affinity of the molecules of the metal for each other becomes weakened, until the breaking point is reached. Then comes trouble."

Vanderbilt's Reply to Critics

New York, Nov. 9.—In a talk today at the show W. K. Vanderbilt, jr., laughed at the criticisms of the users of foreign vehicles. "I think our importation of them," said he, "has been an advantage to the industry. The improvements of the vehicles at the show prove it. I have given manufacturers all the chance they wanted to make a study and make drawings and measurements of my cars."

Records Up to Date

Although some further trials will probably be made, it is hardly likely that the records, beyond one mile, will be disturbed before the opening of a new season. The mile is excepted because it is tolerably certain that the record for all styles of vehi-



A CLUB RUN IN SAN FRANCISCO

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cles will be lowered in the Coney Island trials which occur this week.

Alfred P. Reeves, secretary of the board of control of the National Cycling Association, who has reported most of the record-breaking feats, and who was responsible, to no small extent, for the timing of all the trials made at the Empire track, has compiled a list of records for all distances. The times against which the competitors in the Coney Island trials will ride are as follows:

Gasoline, 1:06 2-5, by Winton, at Detroit, October 24.

Steam, 1:15, by W. L. Hibbard, twice in the same day, at Joliet, Ill., October 19. This record was overlooked by Mr. Reeves, who gives credit to Griffin for his mile in 1:39, at Chicago, September 18, 1900.

Electric, 1:46, by A. L. Riker, at Guttenberg, August 18, 1900.

Motor bicycles, 1:12 2-5, by A. Champion, at Vailsburg, N. J., October 27.

Motor tandems, 1:18 1-5, by Henshaw and Hedstrom, at Buffalo, August 13.

Motor tricycles, 1:18 3-5, by Champion, at Chicago, September 25, 1900.

The other records given in Mr. Reeves' table are as follows:

GASOLINE CARRIAGES.

Miles.

2...	2:13 4-5,	Winton, Detroit, Oct. 24, 1901.
3...	3:20 1-5,	Winton, Detroit, Oct. 24, 1901.
4...	4:27 1-5,	Winton, Detroit, Oct. 24, 1901.
5...	5:33 4-5,	Winton, Detroit, Oct. 24, 1901.
6...	6:40 4-5,	Winton, Detroit, Oct. 24, 1901.
7...	7:47 1-5,	Winton, Detroit, Oct. 24, 1901.
8...	8:54 3-5,	Winton, Detroit, Oct. 24, 1901.
9...	10:01 2-5,	Winton, Detroit, Oct. 24, 1901.
10...	11:09,	Winton, Detroit, Oct. 24, 1901.
11...	14:02 2-5,	Bostwick, Yonkers, Oct. 8, '01.
12...	15:21,	Bostwick, Yonkers, Oct. 8, '01.
13...	16:38 4-5,	Bostwick, Yonkers, Oct. 8, '01.
14...	17:55 3-5,	Fournier, Ft. Erie, Sep. 26, '01.
15...	19:10 4-5,	Fournier, Ft. Erie, Sep. 26, '01.
16...	20:24 4-5,	Fournier, Ft. Erie, Sep. 26, '01.
17...	21:40 4-5,	Fournier, Ft. Erie, Sep. 26, '01.
18...	22:56 4-5,	Fournier, Ft. Erie, Sep. 26, '01.
19...	24:12 2-5,	Fournier, Ft. Erie, Sep. 26, '01.
20...	25:25 2-5,	Fournier, Ft. Erie, Sep. 26, '01.
21...	26:42,	Fournier, Ft. Erie, Sep. 26, '01.
22...	27:57,	Fournier, Ft. Erie, Sep. 26, '01.
23...	29:12,	Fournier, Ft. Erie, Sep. 26, '01.
24...	30:28 4-5,	Fournier, Ft. Erie, Sep. 26, '01.
25...	31:44 1-5,	Fournier, Ft. Erie, Sep. 26, '01.
50...	1:17:50,	Winton, Chicago, Sep., 1900.

STEAM VEHICLES.

2...	4:16 2-5,	W. L. Hibbard, Guttenburg, Sep. 18, 1900.
3...	6:20,	J. W. Howard, Newport, Aug. 19, 1900.
5...	9:40 3-5,	G. C. Cannon, Providence, Oct. 7, 1901.
10...	20:49,	S. T. Davis, Jr., Trenton, Sept. 24, 1900.

ELECTRIC VEHICLES.

5...	10:44,	A. L. Riker, Newport, Sept. 6, 1900.
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ROAD RECORDS, GASOLINE VEHICLES.

25...	1:06:42,	Alex. Fisher, Long Island, April 14, 1900.
40...	1:33:32,	E. B. Shaw, Chicago-Joliet, Oct. 18, 1901.
50...	2:30:01,	Alex. Fisher, Long Island, April 14, 1900.
700...	3 days 20 min.,	A. T. Winton, Cleveland to New York, Nov. 1-4, 1900. Actual running time 38½ hours.

ROAD RECORDS, STEAM VEHICLES.

25...	58:13,	S. T. Davis, Jr., Long Island, April 14, 1900.
30...	2:18:27,	S. T. Davis, Jr., Long Island, April 14, 1900.

ROAD RECORDS, ELECTRIC VEHICLES.

25...	1:00:36,	A. L. Riker, Long Island, April 14, 1900.
50...	2:03:30,	A. L. Riker, Long Island, April 14, 1900.

MOTOR BICYCLES.

2...	2:31 1-5,	A. Champion, Vailsburg, N. J., Nov. 3, 1901.
3...	3:47 2-5,	A. Champion, Vailsburg, N. J., Nov. 3, 1901.
4...	3:05 1-5,	A. Champion, Vailsburg, N. J., Nov. 3, 1901.
5...	6:22 1-5,	A. Champion, Vailsburg, N. J., Nov. 3, 1901.
10...	12:47 1-5,	A. Champion, Vailsburg, N. J., Nov. 3, 1901.

MOTOR TANDEMS.

2...	2:36 4-5,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
3...	3:58 1-5,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
4...	5:20 3-5,	Crooks and Scherer, Philadelphia, September 1, 1900.
5...	6:44,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
6...	8:04 4-5,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
7...	9:25,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
8...	10:45,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
9...	12:05,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
10...	13:22,	Henshaw and Hedstrom, Buffalo, August 13, 1901.
11...	16:23 2-5,	Miller and Judge, Cleveland, May 30, 1900.
12...	17:56,	Miller and Judge, Cleveland, May 30, 1900.
13...	19:27 2-5,	Miller and Judge, Cleveland, May 30, 1900.
14...	20:27,	Miller and Judge, Cleveland, May 30, 1900.
15...	22:22 2-5,	Miller and Judge, Cleveland, May 30, 1900.
16...	24:59 3-5,	Miller and Judge, Baltimore, Md., September 7, 1899.
17...	26:35 2-5,	Miller and Judge, Baltimore, Md., September 7, 1899.
18...	27:08 2-5,	Miller and Judge, Baltimore, Md., September 7, 1899.
19...	29:40,	Miller and Judge, Baltimore, Md., September 7, 1899.
20...	31:10 3-5,	Miller and Judge, Baltimore, Md., September 7, 1899.
21...	33:25 1-5,	Miller and Judge, Manhattan Beach, N. Y., Sept. 4, 1899.
22...	34:56 2-5,	Miller and Judge, Manhattan Beach, N. Y., Sept. 4, 1899.
23...	36:36,	Miller and Judge, Manhattan Beach, N. Y., Sept. 4, 1899.

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- 24...38:11 2-5, Miller and Judge, Baltimore, Md., September 22, 1899.
25...39:46 1-5, Miller and Judge, Baltimore, Md., September 22, 1899.

MOTOR TRICYCLES.

- 5... 6:49 1-5, A. Champlon, Chicago, September 25, 1900.
10...13:37 1/2, Kenneth Skinner, Providence, R. I., October 18, 1901.
44 1/2 miles in 1 hour, Kenneth Skinner, Providence, R. I., Sept. 4, 1901.
50...1:07:10 1/2, Kenneth Skinner, Providence, R. I., September 4, 1901.

Fournier vs. Ford

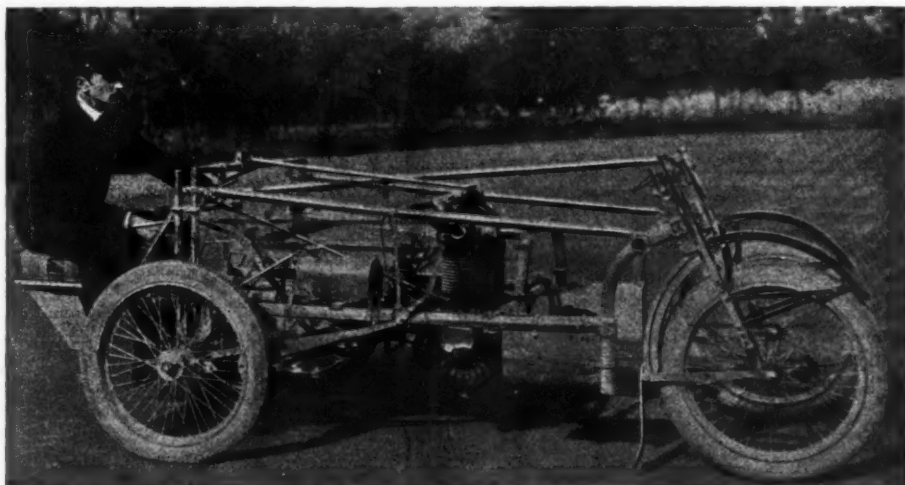
New York, Nov. 11.—Fournier is trying, with fair prospects of success, to arrange a

match run with Henry Ford, the conqueror of Alexander Winton at Detroit, Oct. 10, to be run at Morris Park or the Empire trotting track on Thanksgiving Day. Fournier also issues an open challenge for \$5,000 for a race on the road or track at 20 miles.

Fournier Operates a Toledo

The first public appearance in an automobile of Fournier, after his lamentable accident, was in Washington Square Park, New York, in a Toledo steam carriage. At the time this photograph was taken Fournier spoke in terms of the highest

THE TRUFFAULT RACING MACHINE



This vehicle, which at first glance may seem complicated, is, after one understands the mechanism and its operation, of the greatest simplicity, says La Locomotion. It can be summed up in this: One motor, two pulleys, one belt, one lever, one steering lever and four wheels. There are no chains, no gears. There is but one speed, which can be varied from 10 to 100 kilometers an hour. The frame work is about 6 feet and its width is about 3 feet. It is made of tubing. The wheels are low and are supported at the rear as in an ordinary vehicle. The front wheels are supported by two forks, of motor cycle design. The driver's seat is at the rear and behind the frame work but on a line with

it and of the same height. The motor is placed exactly half way between the axles of the front and rear wheels and slightly on one side is the carbureter and the battery. The gasoline tank is behind the motor and above the frame work. A Bouchet motor is used. This vehicle won first prize in the late race at Deauville, the owners of other vehicles protesting against its admission. The speed of the motor varies between 166 revolutions for 10 kilometers to the hour and 1,375 for 83 kilometers per hour, these figures having been taken officially at the race referred to. This, however, does not represent the maximum speed of the machine. It is the property of M. Truffault, who designed and built it.

NOTES AND COMMENTS.

praise of the ease of operation, quickness to respond and the general all around ability of this type of vehicle, bespeaking for it a rapid rise in favor with European automobilists. When asked if he was still as great an enthusiast on the subject of automobiling, the nervy Frenchman replied, "Sure. Why not?"

G. E. Wright, an English engineer, has devoted considerable time to estimating the brake power of vehicles and has come to the conclusion that a motor vehicle traveling at 20 miles per hour can be brought to a standstill in the same distance that would be required in which to stop a horse-drawn vehicle moving at 7 miles per hour. This is a point worthy of consideration, as many violent opponents of the automobile base their objections mainly on the speed at which they are usually run and the supposed inability to stop them in an emergency.

The Philadelphia papers are usually delivered at Atlantic City soon after 10 o'clock on Sunday morning, but last Sunday the North American scored a record by delivering them soon after 7 o'clock. The trick was done with the aid of an automobile, and from this time on it is likely that there will be a lively scramble over the road through Camden during the early hours of every Sunday morning. Of course, the good people of the town were delighted and the enterprise of the paper was highly commended.

There is a prospect of the formation of a club at Milwaukee, and the promoters believe it will be possible to secure the establishment of a road house fit for the patronage of automobile owners at some convenient point near the lake shore between their city and Chicago.

In a wagon constructed by Karbach & Sons, of Omaha, propelled by a 10-horsepower motor made by the St. Louis Motor

Carriage Co., Messrs. Laston and Shelter left the former city last week for Sheridan, Wyo., 700 miles away. They will operate the machine there for a stage line, and will doubtless be fully capable of running it to advantage after the experience of so long a trip.

Fournier, in a recent newspaper article, expresses the opinion that America is good enough for him, and says that he will stay here permanently. "The automobile industry," he says, "has not quite reached the position it occupies in France, but, knowing the reputation of the country, I am sure it will equal even France within another year."

The people of Joliet, Ill., are so well satisfied with the results of the late automobile races there that they have already determined on a meeting for next summer. It is their present thought to hold it some time in May and to commence work on it about the first week in December. It is their intention to make Joliet so well known in the automobile world that a successful race meet will become one of the annual fixtures of the town.

Henry Ford, of Detroit, who jumped into national prominence in a day by means of his race with Winton at Detroit, visited the New York show last week and announced his willingness to arrange a race with Fournier on a straightaway course. Mr. Ford announced at the time of the Detroit races that he would be unwilling to again drive his machine on a circular track.

H. D. Goode, who has been with the Iver Johnson company at Newark, N. J., intends to establish a manufacturers' agency in the automobile line. He has already secured the representation of a few makers and is willing to secure other goods to handle.

Four gasoline vehicles have arrived at McKeesport, Pa., to be operated there as a stage line.



A LIVELY MEETING OF MANUFACTURERS

New York, Nov. 7.—After 2 days of failure in getting enough members of the National Association of Automobile Manufacturers to leave their stands on the floor for a meeting, the executive committee by personal appeals secured a representative and fairly goodly number to devote 3 hours this morning to a discussion of the topics mapped out by the committee for consideration. Time, however, was found only to touch on three questions—shows, undervaluation of imported vehicles, and “the foreign policy” of some of the officers of the Automobile Club of America. The latter was not down on the programme. It was interjected boldly by John Brisben Walker, provoked a lively discussion, resulting in “nothing doing” and altogether furnished the sensation of the week.

At the conclusion of the convention Secretary W. H. Wells roundly scored the members for their indifference and regretted that the executive committee would be obliged to be without the members' opinions on the important questions of legislation, advertising, prices and discounts, shipments, transportation and insurance. The last named subject he declared was a highly important one. There was a lamentable lack of uniformity in rates, which rank from 40 cents to \$1.50 per thousand, dependent on how much the companies thought they could hold the manufacturers up for. The proceedings were largely to get the opinions of the members on questions that had come up or were likely to before the executive committee.

In opening the second annual convention President Davis reviewed the formation of the association and ran over, briefly, the matters the executive committee had been called upon to handle. He declared that the executive committee had acted throughout the year according to what it thought would be to the best interests of the manufacturers. The show question was the first important one to arise and the committee had headed off many promoters with profit to the manufacturers.

Mr. Davis then outlined the existing evils of undervaluation. The present duty of 45

per cent was practically prohibitive. The law, however, was on the books and should be enforced. He then detailed the successes of the association in the matter of adverse legislation touching on the national gasoline on ferry boats law and the New York highway law, in both of which a modification of existing or threatened laws had been obtained. He was of opinion that sooner or later all the states would copy that reasonable highway law of New York. Insurance, he said, touched everybody. The automobile trade paid double and triple rates on its buildings. Gasoline when properly handled presents no danger.

In the matter of shows the committee had early taken the position that they would become a nuisance and a heavy charge on the trade. By denouncing this abuse the association had curtailed greatly the number of shows and all have had the benefit of the restriction. The committee favored two shows only—one in New York and one in Chicago. The Automobile Club of America and the Chicago Automobile Club were not promoting these shows for profit. The New York show of last year had resulted in considerable profit, between five and six thousand dollars falling to the club's share. The committee had taken steps toward securing the Garden for January, 1903, and believed that the association should get a share of the profits or perhaps the entire profits.

Secretary Wells explained what had been done in the matter of the arrangements with the Chicago Automobile Club for the March show. This brought the show question directly before the convention.

A. P. Smith, of the Automotor Co., asked if it were feasible for the association to completely control the shows. Mr. Gallagher, of the Searchmont Motor Co., replied that the risk was too great and that a share of the profits could be secured without assuming any financial responsibility. A suggestion was made that the association guarantee the accounts and share the profits with the exhibitors, as was done in England, where a 20 per cent dividend was declared to the exhibitors last year.

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Mr. Rogers, of the Steamobile Co. of America, said that the plan of the street railroad car builders' associations might be followed. The members pay an assessment before the show opens and divide the surplus afterward. There had been a surplus for 10 years and this year the surplus dividend was 20 per cent.

C. J. Field, of the De Dion-Bouton Motor-ette Co., favored the arrangement made for the next Chicago show—a share of the profits and no responsibility. He thought the profits should go to the association to establish a fund to carry out the purposes of the association. At present the dues paid only the moderate expenses of administration. Money was needed to defray the expenses of the association in looking after legislation. He thought the profits should go to the establishment of such a fund.

Percy Owen thought the first year's profits would establish a fund of \$10,000, and that the profits should go entirely for this purpose. Mr. Kirkpatrick, of the Hartford Rubber Works, said his company, being only a part maker, was only an associate member, but it favored anything that would benefit the vehicle makers. He said that as to the gasoline on ferry boats matter the association had shown what could be done and all the profits should be devoted to this fund. Charles E. Duryea said his company favored shows being limited to two annually and was opposed to any action likely to antagonize the automobile clubs.

President Davis said that the opinion of those present seemed to be in favor of participating in the management of automobile shows, either taking the entire profits or sharing in them.

"Have the associate members the right to exhibit in local shows?" was asked.

"Associate members are at liberty to do as they please; for they do not manufacture automobile goods exclusively. The rule applies only to active members," was the president's reply.

The Hartford Rubber Works representative said his company wanted to be in accord with the active members. It could not vote and it could not share in any profits; but it thought the accessory members should be able to help the active ones carry out the purposes of the association.

Mr. Leonard, of the Ward Leonard Electric Co., moved that the sense of the meet-

ing on the question as stated by the president be voted as correct. His motion was carried.

The discussion of undervaluations was then brought up and a letter from Joseph Goodman, of Motor World, was read. He said it was merely a question of honesty or dishonesty. Mr. Emery, of the treasury department, had written him that in the 6 months ended June 30 eleven automobiles had been brought into this country, whose valuation was \$12,306, on which \$5,534.50 duty had been paid. Mr. Goodman favored free trade and called attention to the fact that in the 9 months ended with September the American automobile makers had exported \$206,802 worth of motor vehicles. He was sure American makers could compete with foreign manufacturers without a protective tariff and urged that efforts be made to stimulate an export trade.

Mr. Field reported what the committee had done in the matter of undervaluation and told of the letter that had been drafted and sent to Washington. This action of the committee was reported in full in *MOTOR AGE* at the time. It is recent and is fresh in the memory of the trade. He said the treasury officials had suggested that a delegation be sent to Washington. Various instances of flagrant undervaluations were cited by him. Mr. Gallagher said the Philadelphia makers had made efforts to correct these abuses at their port.

On motion of Percy Owen the president was directed to appoint a committee of three to wait on the Washington authorities in the matter, to consist of one each from the ports of Boston, Philadelphia and New York.

In the temporary lull following the passage of this resolution John Brisben Walker disturbed the serenity of the convention by throwing a bombshell not down on the programme.

"I am much disappointed," said he, "at the action of several officers of the Automobile Club of America, who apparently regard as their mission in life the advancement of foreign automobile manufacturers, which they further by their use of foreign vehicles."

Mr. Leonard declared that his views were at variance with those of the previous speaker. He did not believe the club lacked patriotism. When we advance far enough

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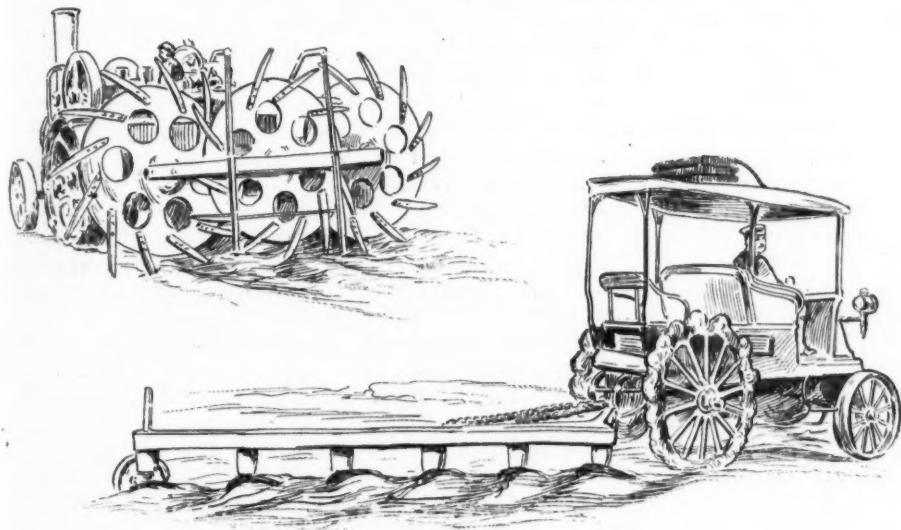
we will get the patronage of these very few who at present adhere to foreign machines. He was sure they were not endeavoring to discourage home makers. We are advancing to perfection and they will soon buy our machines. Theirs will become worthless owing to lack of repair and part facilities. He deprecated any action that would cause further friction between the club and the association.

"They are not ahead of us," replied Mr. Walker warmly. "They have a racing carriage and that's all. We Americans make twenty varieties of useful vehicles. Racing,

as introduced by these foreign cars, has done much to injure automobiling. It violates the law. We can easily build a steam carriage that will go 100 miles an hour, which beats them by 30 miles, just as easily as we can a locomotive. I have a standing offer of \$5,000 forfeit if I cannot produce such a carriage providing any customer will pay the price such a vehicle would bring abroad. We build carriages here not merely for sportsmen, but for the benefit of the whole country."

"Let them bring their cars over," said Mr. Rogers. "Their gasoline cars are at

THE AUTOMOBILE IN AGRICULTURE



France, among other nations, has been attempting to develop something in the automobile line suitable for agricultural purposes. There may now be seen on a farm near Paris, owned by M. Fadatte de St. Georges, the apparatus shown in illustration No. 1. The experiments are in charge of M. de Souza, engineer of the Automobile Agricultural Traction Society, who has been at work along this line for 4 years. The tractor is fitted with an 8-horsepower motor and when not needed for agricultural purposes may be fitted with an ordinary wheel and used on the road. The tires of the rear wheel are 14 inches wide and are fitted with teeth to insure the necessary grip. A device is provided to remove the dirt from the wheels as they revolve.

Another device is that of Mr. Boghoss Pacha Nubar, an engineer of Cairo, Egypt. It is shown in illustration No. 2. He exhibited a small model at the Paris exposition and has since made one of full size and made a number of experiments at the Institute d'Agronomie Nationale, which resulted more satisfactorily than any others previously given public trial. It is fitted with three wheels which not only turn the sod but pulverize it thoroughly. The power is applied by a road locomotive, or traction engine, of 30 horsepower. Commenting on the work of these machines the French paper *La Locomotion* gives credit to America for the introduction of machines of this class.

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present ahead of ours. We can and have learned a lot from them. Our makers and machinists can beat them in the end as they always have done."

"The Automobile club people will buy racers where they want and we cannot stop it," said Mr. Field. "Seventy-five per cent of the members of the club use American machines and many of those owning foreign makes have American machines also. There are a hundred chances for us along useful lines to one in the racing game. Don't start an agitation. Don't advertise this racing any more, or there will be legislation that will do us harm."

Mr. Walker persisted in offering a resolution to the effect that whereas one of the objects of the club, as stated in its constitution, was to encourage and develop automobiling in this country, and whereas the chief officers use foreign makes, the association disapproves of the seeming encouragement such action is intended to give to foreign makes.

Mr. Gallagher didn't believe in stirring up the question. Mr. Smith, of the Automotor Co., thought the gentlemen importing foreign vehicles had done American manufacturers a great favor. But for the foreign vehicles he had a chance to study at the show and in the loan exhibit he would have had to have gone to Paris for the purpose.

A member objected to the resolution because it did not state facts and declared that the names of the officers using foreign machines should be given.

Mr. Gallagher moved that the resolution be laid on the table.

"This industry is in its infancy and this association is in its infancy too," said Mr. Walker when the motion had been seconded and was open to discussion. "This racing started by the foreign machines here is a public scandal. If we are too timorous to pass this resolution stating what we know and what we think we had better go out of business."

Mr. Field replied that it was not a question of being weak-kneed but of minding our own business. Mr. Leonard didn't want Mr. Walker to think he disagreed with him at all, much less was he afraid to express his views by a resolution. He did not think the club had done anything injurious and was sure that our vehicles would soon beat the foreign ones and then would receive the patronage of the gentlemen against whom complaint was made.

The motion to lay on the table was passed almost unanimously.

Mr. McGowan, of the Standard Oil Co., addressed the meeting on the subject of gasoline as a source of power and urged that makers and inventors aim to meet conditions and by improvements in their burners make them capable of employing a greater variety of densities of gasoline lest there be a famine in '76, the standard test. In the course of his remarks he was interrupted by frequent questions and one gentleman bluntly declared there was more the matter with the Standard Oil Co.'s gasoline than there was with the American burners.

The convention then adjourned, with many topics untouched, as already stated.

BUSINESS RESULTS OF THE SHOW

New York, Nov. 11.—In the absence of possibility of official figures of any kind, such as would exist did the sales pass through a clearing house or a national government department, one is dependent entirely on the personal statements of exhibitors as to business done at the show. MOTOR AGE men interviewed many of the prominent exhibitors and quote herein their statements.

The very cheerful mien of the head men at all the stands and the utter absence of kicks of any kind indicated a universal and undoubted feeling of satisfaction with business done or in prospect pervading the

show. Of course the promoters of a new industry like this are apt to be affected by the hurrah of such an exhibition, the crowds, the inquiries and the promises, without stopping during its progress to figure out actual cash results. Then, as it was in the early days of the bicycle business, there was a natural tendency on the part of successful exhibitors to exaggerate statements intended for publication and for those really less fortunate to put up a bluff and keep up with the procession.

There is no doubt, though, that with the track absent as a mere spectacular feature, the attendance this year, though acknowl-

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edged to be far below that of last year, was largely made up of people directly interested in automobiles as owners, as buyers, or as prospective purchasers; and present owners, be it said, constituted a good percentage of the buying class, to whom the remarkable advancement in the American automobile irresistibly appealed.

Buyers were made up of owners purchasing new machines, buyers closing deals previously under negotiation, entirely new enthusiasts becoming owners for the first time, band wagon purchasers of newspaper boomed and sensational types, and agents putting in first orders to secure territory. There was undoubtedly in the aggregate a vast amount of bluff talk going on; but there was also much truth told. Sales reported totaled up at least two millions and the actual proportion of truth in the statements as evidenced in actual sales must have been considerably above fifty per cent of this.

The time of year was normally against sales except to agents in the form of sample orders and futurity contracts and that such enormous business, or to put it more conservatively, such satisfactory business, was done speaks volumes for the prosperity and prospects of the new industry and the efficacy of the New York show as a selling mart.

In the face of all this business done the sentiment was in favor of a later show. The executive committee of the manufacturers' association confessed to being in negotiation for the garden for January, 1903, and all the leading exhibitors declare they will show at Chicago if space can be secured. This indicates, despite the alleged big business, a belief that a time of year nearer the spring buying time is more favorable. A consideration of this sentiment will help in forming a better opinion of the actual business results of this show.

While most of the talk is of the boom order there are some who speak of results in less impassioned phrases and are inclined to be skeptical as to the figures given out.

For instance a very well known and conservative manufacturer, whose name is not to be mentioned, spoke candidly to the MOTOR AGE man on the show and the business done. He said in part: "I do not

believe that as many vehicles have been sold as the newspapers and the exhibitors themselves would have you believe. This is no longer the time of year to hold a show. People are rather looking at what can be bought than actually buying. Those makers who can't deliver urge them to wait and on the other hand when they find plenty of vehicles in stock they ask why there is any need to buy now, at the beginning of winter, on the chance of there being improvements in the spring. Of course there have been a lot of actual sales to people who have caught the enthusiasm and cannot wait or have had an ambition to buy the notable vehicles of the show. Many of the sales, though, the exhibitors will acknowledge, are the mere closing of deals previously made with deliveries promised at show time. I notice this year that the attendance is purely local, while last year people were here from all over the country. The people from a distance are mainly those seeking agencies. I suppose there were a hundred of these at one stand the first day. I am inclined to think that a lot of agencies have been placed on the consignment plan. At this stage of the industry the only safe plan is to insist on cash for first orders until credit be established on the basis of actual results and not mere promises and prospects."

This is what the exhibitors interviewed had to say:

Frank Fanning, of the Frank Fanning Co., said: "We have had fair sales and I am well satisfied with the results. These shows educate the people and that is what we are mainly here for. There are lots of would-be agents on hand informing themselves. The bicycle and the carriage people are looking to the motor vehicle to add their line. It is natural that they should."

Smith & Mabley, the Panhard agents, said they had sold \$52,000 worth of vehicles in the last three days of the show, including a 40-horsepower for \$17,000, a 24-horsepower for \$12,500, and a 12-horsepower for \$8,000.

W. H. Wells, of the Steamobile Co. of America, said: "We came here to help educate the public and ourselves. We have all our department heads and superintendents here to study the progress of the art,

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and what they have learned will in itself pay us for the expense of being here. A large percentage of those attending the show intend to buy vehicles and, of course, we have had our chance to interest them. Though this is largely a gasoline show owing to the prominence that has been given the foreign gasoline vehicles in New York, I believe the country at large favors engineers and look to the steam engine to steam. Americans are a nation of steam solve the automobile problem. We are satisfied with the show. We have been very conservative in placing our agencies only on the basis of cash orders and have steered clear of the consignment method."

D. B. Smith, of the D. B. Smith Co., said his concern had been well patronized and had sold more than ten vehicles. It had not done much in the way of agencies.

Leon Schermerhorn, of the Steam Vehicle Co. of America, reported his company well satisfied with business done, having closed far more actual business than last year, and on a cash, not a contract basis. Sidney B. Bowman, the New York agent, had been especially successful in making sales. He declared this year's visitors to be made up largely of buyers and not mere "rubbers" like last season.

F. M. Laude, of the United States Long Distance Automobile Co., said: "We have sold all the stock we had on exhibition and are well pleased with the agencies we have placed. Ralph Temple secured the Chicago agency and placed an order for twenty-five vehicles for a starter."

J. A. Kingman, of the Locomobile Co. of America, said: "Just say we have sold five times as many vehicles as last year and that we are mighty glad the track was abolished. Last year it attracted a lot of people as mere spectators and now these people come to the stands to examine the vehicles and buy them. That will about cover what we have to say."

Albert T. Otto, of the Automobile Co. of America, said: "We have closed sales during the week which will amount to over \$100,000. Of course many of these sales were to people with whom we have been negotiating for some time and to others who have our machines and want our latest models. We find that this year there is a bigger demand for high powered machines than last year. We have sold cars

to people from pretty near all over the United States, many of whom are dealers."

Hinsdale Smith, of the Automotor Co., was well pleased with the business he had done. He said he had received orders which would keep his plant busy for some time, the little tonneau he exhibited for the first time having proven a good seller.

General Manager Galleher and W. D. Gash, of the Searchmont Motor Co., were jubilant over the week's business. Mr. Gallaher stated that he had made many sales and had received orders for several special machines for delivery during the next two months. Among the sales made by the firm was a 24-horsepower racing tonneau to Clair M. Hamilton and a 12-horsepower tonneau to A. A. Anderson.

George Lane, of the Lane Motor Vehicle Co., stated that he thought the show had proven a good thing for the trade generally as it had enabled manufacturers to see how far the business had progressed and gave them an opportunity of examining numerous accessories which are now being made. He said: "We have had a large attendance at our stand all the week, have made sales and have opened negotiations with many people which will undoubtedly lead to sales. We are well pleased with the week's business."

Manager Warner, of the R. E. Dietz Co., was much gratified over the big showing made by the Dietz lamp on the vehicles exhibited on the floor of the building. More than three-quarters of the vehicles exhibited were fitted with Dietz lamps, a remarkable demonstration of the popularity of the company's product.

Mr. Lester, of the Post & Lester Co. of Hartford, whose booth on the north gallery was one of the busiest places in the building, was well satisfied with the week's sales. The firm kept a register in a conspicuous place and by Saturday night Mr. Lester had secured a valuable list of automobile owners and manufacturers.

One of the novelties of the show was the Punctnot tire marketed by Coe, Smith & Co., of 158 Summer street, Boston. This tire has an unconfined inner tube protected on the tread by a felt-like nonpuncturable substance which it is said will resist all puncture making objects. The inner tube is not surrounded by fabric as has been usual in tires of this kind and consequent-

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ly retains its resiliency under all circumstances. Arthur B. Smith, of the firm, a popular figure during the week, said: "Our tire weighs less than other tires, is made in all sizes, is higher in price than other tires, but owing to its long wearing qualities is the cheapest to buy." Mr. Smith showed a tire that had been in use on a Locomobile for 6 months and on being cut open the protecting filler was found

to be in the same condition as when the tire was made. T. L. Seymour has taken the western agency for the tire and will establish headquarters in Chicago during the coming week.

John D. French, of the St. Louis Motor Carriage Co., while not an exhibitor, was kept busy greeting his friends. Mr. French has established a branch in Boston and will remain in the east about four weeks longer.

THE ASSOCIATION'S ANNUAL BANQUET

New York, Nov. 7.—Including members and guests one hundred and seven sat down at ten o'clock tonight at the banquet at the Hoffman House, which followed the annual meeting and election of officers earlier in the evening at the Garden. The decorations were simple yet appropriate. The piece of resistance, as the French say, was an automobile, in candy, set on a high pyramid of candied fruits. The miniature vehicle was over 3 feet in height and of the open phaeton type. It rested before President Davis. A Hungarian band furnished the music.

Gen. Nelson A. Miles, U. S. A., and Amzi Barber sat at the right and left of the presiding officer, the other guests of honor at the speakers' table being Mr. Eddy, of Chicago; W. W. Niles, counsel of the association; Angus Sinclair, proprietor, and Malcom W. Ford, editor of the Automobile Magazine; and T. Omerford Martin, editor of the Electrical World and Engineer, the toastmaster. Mr. Martin sustained his reputation for wit, be it said, and the poet and cartoonist of "Spotless Town", supplied a laughable doggerel rhyme for each speaker and his subject.

General Miles was the first speaker. He was happy, he said, in passing through the city from Maine to Washington to visit the beautiful and instructive automobile show. He considered it one of the most interesting experiences of his life to note the astonishing progress of motor vehicles and the extent of their use. As a military man he was interested in them by reason of their possible use in the army. He compared the rapid growth of the automobile with the slow progress of the railroad and believed the former was destined to supply

what was missing in the latter and would have an immense influence on highways, reflecting back on the country's interstate commerce. At the conclusion of the speech of the general of the army the band played the "Star Spangled Banner," the diners standing throughout.

Albert R. Shattuck replied to the toast of the Automobile Club of America and referred to the criticisms on the use of foreign vehicles by some of the officers. He said frankly they bought the French machines because they wanted them. They would buy American machines just as readily as soon as they fulfilled all they asked for, and he thought, judging from the show, that that time was near at hand. They did not care to pay heavy duties nor for the inconvenience of having to send abroad for every nut and screw. The present foreign machines they had now would soon wear out and the improvements in American machines were so great that they were worthy of immediate purchase.

Mr. Eddy spoke on touring. The Chicagoan prefaced his remarks with several witty sayings and in fact kept his auditors roaring with laughter all through his speech. He told about his tour from Chicago to Boston via New York. He said he had with him his brother, who didn't know an automobile from a hay wagon and didn't know any more at the end of the journey. He advised tourists not to start for any particular place, for then they would get there. His stops for repairs were the delight of his trip, for they gave him a chance to view the scenery. He was sure he spent three quarters of the time under his carriage. He spoke highly of American invention, saying Americans

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were building vehicles with a view to the roads they had to travel. Incidentally he preferred to the American vehicles that went through the endurance run second to Bishop's famous Panhard but ahead of all other foreign machines.

Amzi Barber, the asphalt king and head of the Locomobile company, said that as he had built roads the idea struck him to build vehicles to travel on them and so he took up automobile building. His first vehicle was one of the old electrics. He paid \$3,000 for it and spent \$1,400 for repairs on it in six months and then passed it on for \$400 to the next rider. He then

looked about him for over two years and bought the first steam vehicle from the Stanley brothers. It was started in the Crescent works. Peter Forg furnished the supplies for it. He was so pleased with it that he bought the Stanley patents and put expert workmen to building the vehicles. He had been carried away with enthusiasm at its smooth running up hill and on the level.

W. W. Niles began his remarks in a way that promised a treat of humor, when he was suddenly taken ill and fainted.

President Davis immediately adjourned the banquet.

WHY THE MAKERS INTEND TO RUN THE SHOWS

One of the subjects discussed at the general meeting of the manufacturers' association, during the New York show, was the management of future exhibitions and the disposition of the profits. A year ago the manufacturers were apparently so enamored of the clubs that they were willing, and even anxious, to place all matters relative to shows, endurance tests and the like in their hands and went so far as to decree that all shows held after that time should be held at New York and Chicago, under the auspices of the clubs of those cities.

MOTOR AGE argued at that time that a large share of the show profits should properly go to the people who make the show, to wit, the manufacturers. There are three ways in which this might be done; first, by the association retaining all the proceeds; second, by returning them by the exhibitors in proportion to the amount of money each may have paid; third, by a combination of those two systems, devoting a part to the association and returning a part to the exhibitors. Prior to and at a meeting of the executive committee of the association the writer advanced this idea, but the committee was not then willing to admit that the course suggested was proper.

Since that time the makers have undergone a partial change of heart, brought about, primarily, by the refusal of the Automobile Club of America to give heed to the recommendations of the executive committee of the association. The committee asked that the show be held in the spring instead of in the fall and this recommendation was

overruled by the club. Next the association, very properly, objected to the free exhibit of foreign machines, a natural proceeding in view of the fact that the show was made possible by the amount of money paid for space by American makers. Despite the protest the club persisted in its intention. The result is that relations between the club and the association, which might have remained cordial indefinitely, are so strained that the association has determined to take an active part in the management of shows, thus depriving the club of at least a large share of the profits, but saving the amount for its members or devoting it to the work of the association.

The course recommended by the executive committee, and approved by the general meeting, seems to be strictly in accordance with the rights of the members and perfectly natural in view of the stand taken by the club. It is reported that, for its share of the proceeds of the show of 1900, the club received about \$6,000. It will receive a much larger amount this year, the income having been largely increased. It need hardly be said that the club is not in need of any such income from this source. It has a large membership, composed mainly of wealthy people, who are able, and probably willing, to bear the expense of such events as the club may promote. And in making these statements the fact that the club has done a great deal for the industry has not been overlooked. The endurance run stands as the most creditable thing accomplished since the industry began.

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The Chicago club quickly realized the force of the arguments presented by the president of the association. A very short time was necessary to bring about an understanding which was agreeable to all parties concerned, the club displaying a desire to work in harmony with the manufacturers and to show its appreciation of the fact that it is they who make the show and that without their co-operation the club would be absolutely powerless.

It is understood that the executive committee has already secured Madison Square Garden for a date early in the spring of

1902 and that its members will not take part in any show held in New York city prior to that time.

At the meeting referred to the members were divided in opinion as to the division of such proceeds as may fall to the association. Some of them felt that the profits, or a large part of them, should be returned to exhibitors. There is a way to satisfy all parties. The subject will, however, be discussed at length by the executive committee which, in its wisdom, will probably evolve a satisfactory plan of its own before the shows for another season come around.

MAKERS' ASSOCIATION FORMALITIES

New York, Nov. 7.—Some twenty active members attended the annual meeting of the National Association of Automobile Manufacturers at Madison Square Garden to-night. The proceedings were brief and confined strictly to the business in hand. The secretary's report showed a membership of ninety, of which forty were active members. This is claimed to include all the automobile makers of recognized standing but three. Treasurer Walker reported a balance on hand of about \$350. The following were elected as members of the executive committee for 3 years, to take the place of the present one year members: S. T. Davis, jr., of the Locomobile Co. of America; D. E. Rianhard of the Overman Automobile Co.; Charles E. Duryea, of the Duryea Power Co.; Charles Clifton, of the George N. Pierce Co.; and J. W. Packard, of the Ohio Automobile Co. H. Ward Leonard had previously been elected a 2-year member of the executive committee by the committee itself, in place of J. M. Hill, resigned. The executive committee will elect the officers. Thanks were voted the Automobile Club of America for its efficient management of the show and the management of Madison Square Garden for many courtesies extended. A hasty adjournment was then taken for the banquet awaiting the members at the Hoffman House.

The Closing Scene

New York, Nov. 9.—The automobile show wound up at Madison Square Garden to-night with the largest attendance of the

week. The tooting of horns and the clanging of bells marked the closing and indicated the happy frame of mind of the exhibitors at the result. It is admitted that the attendance is far below that of last year owing to the show's having been almost exclusively a trade affair. The Madison Square Garden management, however, declared that its object had been to please the exhibitors and that as it had accomplished this it was well satisfied.

"We were not looking for money," said Secretary Butler, of the A. C. A., to the MOTOR AGE man. "We aimed solely at the benefit to the industry. The track space was needed by the extra exhibitors and besides it only offered a counter attraction to the exhibits and stood in the way of business."

Miscellaneous Show Notes

There was considerable talk during the week about the alleged combination of five western dealers, who it was said came to the show prepared to place a bunch order for a large number of wagons with the manufacturer who would agree to their terms as to billing. At last reports they had failed to make the arrangement they hoped and had placed their orders individually with various firms.

The cycle shows in their best days never yielded such a crop of orders as were taken by the manufacturers of automobiles at Madison Square Garden last week. Despite the fact that the show was held at a time

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ers were there in great numbers, not the trade buyers, but individuals who were prepared to pay big prices for machines so long as they could be assured of delivery early in the spring. The trade, as represented by dealers, was not in evidence to the same extent as at Chicago last March, or as they will be there again next March, but the makers cared little for that in view of the fact that sales were plentiful and prices satisfactory.

Alexander Fischer, superintendent of the Automobile Co. of America, an engineer of wide reputation, received congratulations on his latest production, a big six-cylinder Gasmobile. The machine was sold the first day of the show. Few of the thousands of visitors who were constantly crowding around the immense motor car recognized in the quiet, easy gentleman who patiently explained its mechanism the creator of the powerful machine.

Among the Chicago people seen at the show was C. H. Tucker, of the Locomobile company; Ralph Temple, who during the week made arrangements to handle the National electric, Oldsmobile, White, U. S. Long Distance and Geneva machines; Frank Fanning and M. E. Cook.

The intense rivalry among the manufacturers was shown on Thursday, when one

exhibitor caught one of the crowd around his stand sketching a part of his machine. The artist was only stopped in his efforts when a threat of arrest was made.

Fred Billings, of the Billings & Spencer Co. of Hartford, Conn., one of the first builders of steam carriages in this country and an all-around engineer and good fellow, was an interested visitor for several days during the week.

C. E. Whitney, of the Whitney Mfg. Co., of Hartford, was kept busy during the week taking orders for the Whitney roller chains. The chains were exhibited both in the stands of Post & Lester and C. E. Miller.

Louis Clarke, president of the Autocar Co. of Ardmore, Pa., came to the show from Philadelphia in one of his vehicles accompanied by James Haslett. Mr. Clarke made the 120 miles in 6 hours.

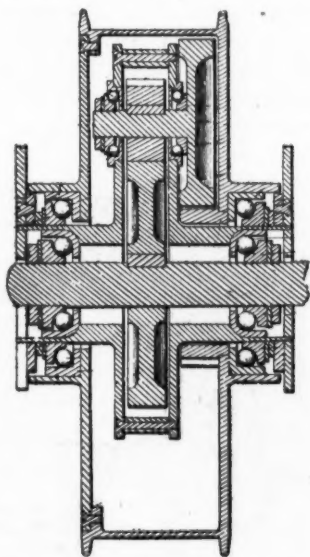
The success of the tonneau gasoline machines, as stated in the last issue of the *MOTOR AGE*, it is said, has resulted in one large manufacturer of steam machines preparing to place on the market a similar vehicle, with the boiler and engine under the bonnet over the front axle. This machine, it is reported, will be on the market inside of 2 months.



LATE EFFORTS OF DESIGNERS

Alex M. Neeper is the designer of a vehicle wheel wherein the gearing for varying the speed of the wheel in relation to the speed of the motor or driving shaft is confined entirely within the hub. The power-driven axle is provided with a gear wheel, fixedly mounted thereon, and which meshes into a pinion mounted within a non-rotatable cage. Upon the outer end of the shaft, upon which the latter mentioned pinion is mounted, is a spur gear, somewhat larger in diameter than the pinion. The hub shell proper is mounted on ball bearings, surrounding the cage, and on the inner face of one side of this shell is a toothed flange, meshing with the spur gear. Thus it will be seen that a rotary motion applied to the driving shaft is transmitted to the wheel through the spur gear mounted on the shaft to the small pinion and the spur gear attached to the shaft to which that pinion is fixed, and thence to the toothed flange of the hub shell.

The case containing the intermediate gears projects beyond the faces of the hub



shell and is connected with the rigid framework of the vehicle in any manner desired to prevent its rotation. Within and upon the gear case are located ball bearings for

the hub shell and the driving shaft. The intermediate gear is also provided with ball bearings located in the casing of these gears. As shown in the illustration, the chain of gears is so proportioned that the speed of the driving wheel will be greater than that of the power shaft. It will, however, be readily understood that by varying the relation of the gears the conditions might be reversed or any desired ratio be obtained.

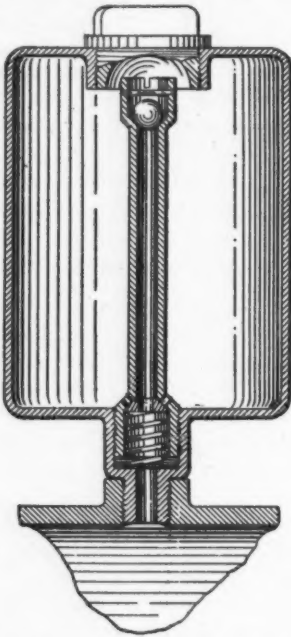
A Cylinder Oil Cup

A more or less troublesome feature in connection with gasoline engines is the proper lubrication of cylinders. Otto C. Duryea, of Los Angeles, Cal., has designed an automobile oil cup which gives promise of excellent results. The cup, a section of which is shown in the illustration, is secured into the cylinder, care being taken that the threaded shank does not project far enough to come in contact with the piston. The location of the cup is such that when the piston is at its inner position the opening from the cup is revealed, and at other times it is covered by the piston. Running down through the center of the oil cup and through the shank there is a cylindrical tube, the bottom opening directly into the piston chamber and the top projecting up into the oil cup and terminating in a hemispherical valve seat. In this tube are two valves, one at the top and one at the bottom. In the top of the tube is a spherical valve stopper, which rests on the valve seat and permits the gas to pass up through the tube from the piston chamber into the oil cup, which occurs when the piston reaches the limit of the outer stroke because of the unavoidable leakage of gas around the piston, a portion of the gas passing up the tube and into the oil cup, where it becomes entrapped by the closing of the ball valves.

Within the lower end of the center tube is a conical valve, held in place by a spiral spring. In the tube around the valve seat is a number of holes for the passage of oil from the cup when the valve is opened. When, after the admission of gas to the oil

LATE EFFORTS OF DESIGNERS.

cup, the piston on its return stroke uncovers the opening to the oil cup, the pressure of the gas within the cup overcomes the strength of the spring and forces a certain amount of oil out into the cylinder. The amount of oil thus served may be varied



by the tension of the spring, which may be regulated by screwing the tube containing the valve seat up or down, and with this object in view a slot is cut in the top of the tube so that a screwdriver may be applied through the cap in the top, which also allows for filling the cup.

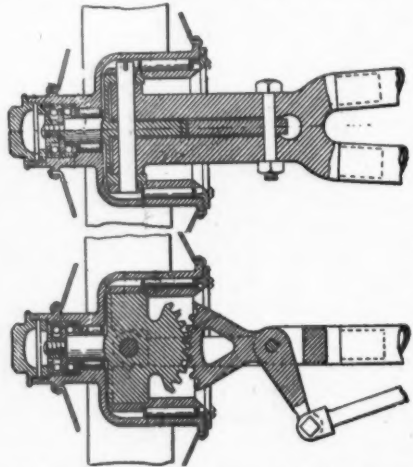
Packing Ring for Steam Engines

Edward Rathbun, of Toledo, has designed a new packing ring for pistons of steam engines, by which it is expected to reduce the frictional wear and cutting of the cylinder incident to the use of hard metal piston rings. It is well known that the various anti-friction metals, such as phosphor bronze or the numerous Babbitt compounds, lack the necessary elasticity to preserve their contact with the cylinder or take up the wear of the ring by expansion. The new packing ring consists of a steel ring of dove-tail section and a ring of anti-friction metal such as Babbitt, in which the steel ring is bedded. The two rings are split by transverse and circumferential cuts so that the

ends overlap each other side by side. The ring is formed by placing the steel expansion ring in a mould and then casting the Babbitt metal around the steel ring, the inner side of which is preferably left exposed. The ring is then split or sawed as above described, or the steel ring may be cut before casting the Babbitt around it. The designer states that the ring is also applicable to gas engines, but this is doubtful, as the soft metal would be liable to fuse under the heat generated in a gas engine cylinder, at least to a point where it would drag.

Warren Running Gear

George E. Warren, of Boston, is the inventor of a new pattern of running gear, the distinctive feature of which is the front axle and the method of attaching and operating the steering wheels. The axle is of truss form, the parts under consideration being two tubes and two end castings of peculiar shape. The ends of the tubes are seated over projections on the castings and brazed thereto. On the castings, forming the ends of the axle, are pivotally mounted the wheel journals. The journals are constructed so that the pivotal center is in the medial plane of the wheel, thus avoiding the tendency to throw the wheel out of line when striking an obstruction. Instead of the cranked steering arm projecting from the stub axle in the manner common to this type of steering hub, the jour-



nal is provided with a toothed web, extending within a horizontal slot in the casting, forming the end of the axle. Toward the inner end of this slot is pivoted a cranked

LATE EFFORTS OF DESIGNERS.

lever, one end of which is toothed to mesh with the toothed portion of the above mentioned web on the journal. To the other end are attached the links of the steering mechanism. Surrounding the central portion of the journal is a sleeve on which run the inner pair of bearing rollers.

In the illustration Fig. 1 is a vertical section, showing the pivot, and Fig. 2 is a horizontal section showing the steering mechanism. The steering lever is attached to a pillar passing through the bottom of the carriage body. From the bottom of this pillar connection is made with a second pillar pivotally secured behind the rear of the front axle. It will be readily seen that with the geared connection with the wheels it will be necessary to cross the links from front to rear through the axle in order to avoid the reversing of the action of the hand lever. The arm of the toothed lever to which the links are connected extends in front of the axle, and the links pass between the tubes of the axle.

Electrical Power Transmission

Joseph Sachs, of Hartford, Conn., is under the impression that he has solved the problem of power transmission in motor vehicles, and claims that, by virtue of his device, a much smaller engine can be used than would be required by the use of the transmission devices in general use. The proposition advanced by this gentleman is the introduction of a dynamo or electric generator coupled with and driven by a gasoline motor. The final driving power is derived from an electric motor, connected with the driving wheels of the vehicle and operated by the current derived from the above-mentioned generator.

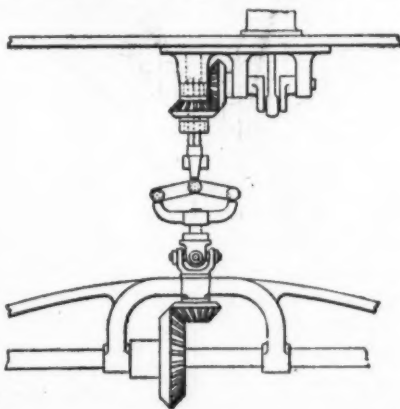
To quote from Mr. Sachs' own description, "the motor and dynamo are electrically connected in such a manner that if the motor is running at a set speed, and is called upon to supply additional torque to overcome obstructions met by the vehicle, the said additional torque requires an increase of the electrical current flowing in the motor and supplied from the dynamo. This increase of the current at once causes a lowering of the electromotive force generated in the dynamo. Increase in the electric current supplied to the motor enables the motor to exert its extra torque effort, but at a decreased speed, owing to the decreased poten-

tial supplied to it. This lowering of the electromotive force and increase of the current results in a reduced speed and an increased torque capacity without an increase of power supplied from the dynamo to the motor, and consequently without increasing the power demanded of the prime mover or engine. This action is automatic, and in order to effect the same between the dynamo and motor, automatic regulating devices are employed."

The inventor's ideas are beautiful to contemplate, but when consideration is given to the loss of power incident to the roundabout course of transmission, the value of the scheme dwindles. Similar methods are daily employed in driving machinery in factories where the original source of power is such that the loss in transit is of little consequence, but for automobile work, where it is manifestly desirable to keep as close to the original source of power as possible, the value of the scheme is questionable.

Vertical Power Transmission

In an endeavor to solve the problem of conforming to the varying relations of the carriage body and the driving axle, Frank G. Webb, of Brooklyn, has designed a vertical transmission-gear wherein allowance is made for movement in all directions. In this device it is required that the motor shaft be directly over the driving-axle, and the transmission gearing comprises two sets of bevel gears and a flexible appliance, serv-



ing as a transmission shaft. On the motor shaft is a bevel gear meshing with a similar gear, which is supported and has its bearings in a lug attached to the body of the vehicle. To the lower end of the shaft,

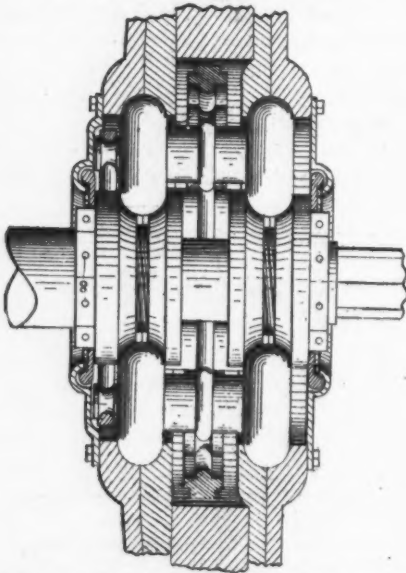
LATE EFFORTS OF DESIGNERS.

rotated by the latter-mentioned gear-wheel, is a boss with forked arms, which are connected by links to similar forked arms attached to a shaft which forms the continuation of the driving mechanism. At the lower end of this latter shaft is a gimbal joint, connecting with the stub shaft, carrying one of the lower pair of bevel gears.

The links connecting the forked arms are so attached to the arms as to allow of a vertical motion therein sufficient to overcome the effects of inequalities in the road. The action of the gimbal joint is to allow for the swinging of the body on the running gear. Should the design of the vehicle and the location of its components be such as to preclude the placing of the engine directly over the axle, a counter-shaft might be utilized, and driving connection between it and the engine be of any desired form.

A Complicated Bearing

J. F. Foster, of Argentine, Kas., is the inventor of a roller bearing, principally distinguished by its complication and multiplicity of parts. The rollers are shaped like dumb-bells, and run in grooved races, the inner of which is comprised of four cones,



seated on octagonal portions of the shaft in two pairs. The outer member of each pair of cones is threaded upon the inner, in order to provide for adjustment. On the central portion of the dumb-bell-shaped rollers is an annular projection, which forms a tongue

and groove connection with a set of spacing rollers having a grooved periphery. In the center of the hub shell is a ring, provided on its inner perimeter with an annular flange, fitting the peripheral grooves of the spacing rollers and preventing their lateral movement. There is no particular reason why this bearing should be in any way superior to the many excellent roller bearings now in the market, and it has the disadvantage of being much more expensive in construction.

Automatic Pumping Device

It is stated on good authority that the inventive Yankee has utilized all parts of the classic hog except the squeal and the same degree of inventive intellect is being exerted in the development of the automobile to the extent that W. F. Singer, of New York, proposes to utilize the vertical motion of the body to actuate a series of pumps for the purpose of supplying water to the boiler and air to the gasoline tank. In carrying out this idea two pumps are horizontally disposed in line with and facing each other and may be attached either to the bottom of the body or to the running gear. The pistons of the pumps are pivotally connected to a pivotally attached vertical post, forming a toggle joint of which the point of attachment to the vertical post is the elbow. The pumps are so spaced apart that the pistons of each are at the end of their respective strokes when the toggle-joint is fully extended, so that a movement of the body either up or down from its normal position drives the pumps. By pivoting the vertical post to its attachment danger to the pumps from a sidewise lurch of the vehicle is obviated and the action of the pumps is equalized.

The Crest Mfg. Co. has been incorporated under the laws of Maine, with \$50,000 capital, of which \$1,500 has been paid in. I. H. Davis, of Boston, is president and E. D. Mellin, of Cambridge, Mass., treasurer of the company.

A factory is to be built in Akron, O., for the Stein Double Cushion Tire Co., formerly of Meadville, Pa. The company is incorporated under the laws of New Jersey with a capital of \$100,000.

Makers of motor bicycles should send catalogues to H. D. Beaumont, Cuero, Tex.

MOTOR AGE'S SECOND ANNUAL DIRECTORY

There is no such thing as an up-to-date directory of the automobile trade. Such a thing has been barely possible in view of the changes which, in this early stage of the industry, occur almost daily. The most complete thing of the kind so far issued was the first annual directory issued by MOTOR AGE last year. But the industry, though still young, was a trifling thing in comparison then. No attempt was made to provide the complete information which the publishers intend to present in the coming work.

There will be two lists, one alphabetical and the other classified. The latter will take in the most minute articles used by automobilists or makers of automobiles and will aim to show where all such are obtainable. To accomplish this a great deal of work is necessary and the assistance of the trade is therefore solicited. Makers are requested to send to MOTOR AGE a complete list of all the articles they make, from a complete automobile down to the smallest part.

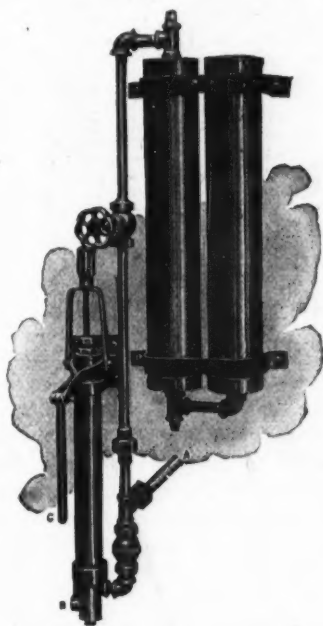
In compiling works of the same nature in other lines the publishers have found difficulty in distinguishing between those who make parts for use in their own vehicles only and those who manufacture for sale to the trade generally. Only the latter are wanted for the directory. For example, the fact that the Flyaway Automobile Co. makes motors is of no interest to the user of the directory unless the company is prepared to sell the motors to him. Makers are therefore requested not to ask to be classified as makers of goods unless they are prepared to supply those goods in the open market.

Other features of the Christmas number will be announced from time to time. It will be sent to annual subscribers to MOTOR AGE without charge. To others the charge will be \$1.

Phelps Gasoline Pump

The Boston Automobile Exchange is placing on the market a new device in the way of a gasoline pump for steam vehicles, which is designed to do away with the air

tank commonly employed to keep pressure of gasoline at the burner. The Phelps system introduces several new features not heretofore used in similar appliances. The pump proper is encased in a barrel. The pump piston is a simple plug without stuffing box, and no attempt is made to make it fit perfectly tight. The barrel enclosing the pump is placed on a level with the gasoline tank and is connected therewith by an unobstructed passage, so that the

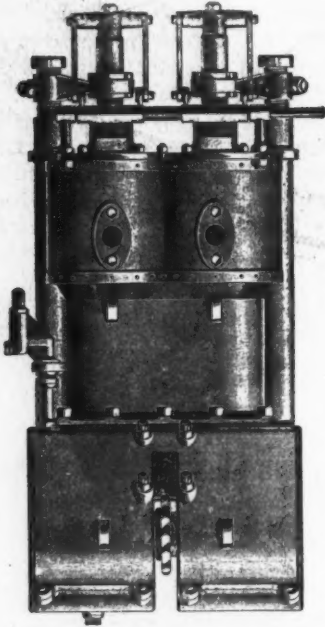


gasoline stands in the barrel at the same level as in the tank. Any leak by the piston is retained in the barrel and used over again without waste. The pump itself is peculiar, in that the engine simply raises the piston and a spring depresses it. It is therefore plain that when the pressure in the receiver balances the pressure of the spring on the piston no more gasoline will be pumped until the pressure in the receiver has been reduced by the gasoline passing thence to the burner. As the pump is large enough to pump much more than the quantity required by the burner it follows that the pump is out of action a great

INFORMATION FOR BUYERS.

part of the time, the piston remaining elevated.

Another new feature is introduced in the receiver, where but a small quantity of gasoline is under pressure at a time, and from which it is fed to the burner as re-



quired. The receiver consists of two cylinders connected at the bottom by a cross pipe. The upper end of one is connected with the pump and the upper end of the other is closed. In starting the system a plug at the top of the first receiver cylinder is opened and the cylinder filled with water. The plug is then replaced and the pump being started, gasoline is forced into the upper part of the cylinder driving the water through the cross pipe into the other cylinder until the air cushion formed therein reaches a predetermined pressure governed by the tension of the pump spring. The object of this double arrangement and the introduction of the water is to prevent the gasoline from coming in contact with the air cushion and absorbing it. A small detachable lever is provided for starting the pump by hand.

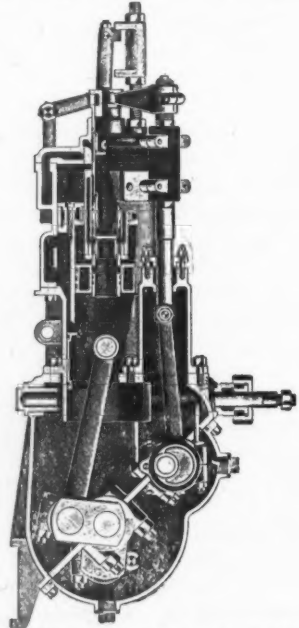
The usual method of attaching these pumps is to secure them directly to the side of the engine. The intake is attached to the supply tank and the outlet to the feed pipe to the burner. An adjusting screw regulates the tension of the spring and the

consequent pressure of the gas at the burner. Any pressure may be carried, from 10 to 100 pounds.

The Whitfield Engines

The Whitfield Co., 39 Cortland street, New York, has introduced a compound engine which should arouse interest in the trade. It is a central valve engine, having a low pressure cylinder, the extension of which forms the cylindrical guide and support for the crank shaft. The low pressure piston is a trunk piston, the walls of which are set in from the circumference to form the walls of the reciprocating high pressure cylinder, which reciprocates on a stationary piston carried by the valve casing. The company claims a simple and substantial construction, which will result in indefinite service without attention or repairs.

No more space is required than for simple engines of the same total horse power and each engine is controlled by a single piston valve and one eccentric. The reversing gear is of simple form, in which links and



levers are dispensed with, and which locks itself firmly, thus preventing any lost motion. The guides and support to the crank shaft are unusually rigid and strong. Stuffing boxes are entirely dispensed with, and the construction is such that any leakage must blow out with the exhaust. This

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has enabled the company to inclose the main bearings, reversing gear, and eccentrics in oil, and dispense with ball bearings. By merely shifting a plug in the central valve the steam distribution is changed to that of a simple double acting engine, both cylinders exhausting to atmosphere.

For a wagon requiring a total in emergencies of 5 horsepower the company will build a $2\frac{1}{2}$ horsepower compound, with a total reserve of 5 horsepower. Four sizes will be built.

The company's claims to economy of water and fuel are based upon reduced clearance of $1\frac{1}{2}$ per cent; internal heat distribution, and ability to build a compound engine small enough to carry the average load economically, and at the same time possess a reserve power equal to emergencies.

New Corporations and Enterprises

The Western Automobile Co., of Cleveland, has been incorporated; capital, \$10,000.

The Automobile Wheel Co., incorporated at Nashua, N. H., is capitalized at \$1,000,000.

The arrival of machinery at Newcastle, Ind., for the establishment of an automobile factory is reported.

Mound City Motor Co., St. Louis, with capital of \$2,000, has been chartered by J. J. Mielke, E. M. Dayle and G. W. Bonney.

Canon City, Col., is to have an automobile factory conducted by S. T. St. John and A. H. Huffman. They expect to make gasoline vehicles.

The new factory of the Baker company, of Cleveland, will be five stories high, 45 feet front and 138 feet deep. It will be located at 116 Jessie street.

The presence in Milwaukee of Thomas Hahn, secretary of the Auto Supply Co., of New York, has given rise to the story that the company will locate a factory there.

The Appersons will withdraw from the Haynes-Apperson concern and start another factory in the same town. The president of the company states that it will be found doing business at the same old stand.

Automobile and Bicycle Livery. Principal place of business, Pasadena, Cal. Directors,

Lucy A. Willard, N. T. Norton, J. H. Sepp, A. C. Herrick and J. A. Goodrich. Capital stock, \$25,000; subscribed, \$4,500.

A deal in which New Yorkers are reported to be interested is afloat at Saginaw, Mich., under which it is said that an automobile factory will be located there. The capital of the coming concern is given as \$250,000.

Louis Ohnhaus and Marion Black, of Fort Wayne, Ind., both well known in the trade, have invented a gas engine whose particular merit consists of its light weight. They are trying to secure capital to manufacture.

The Automobile Marine Power Co. has been incorporated in New Jersey by Albert L. Kull and W. C. French, of Camden, and Edward Pine, of Philadelphia. The authorized capital is \$150,000, of which \$95,000 is paid in.

The Standard Rotary Motor Co. has been incorporated in New Jersey; capital, \$1,000,000; local agent, S. Cutler Dentz, 290 Eighth street, Jersey City. Incorporators, William C. Roberts, John H. McLain, Mark J. Straus and Benjamin Tuska, all of New York.

The directors of the H. H. Franklin Mfg. Co., of Syracuse, will ask the stockholders to sanction an increase of capital from \$100,000 to \$250,000 for the purpose of manufacturing automobiles. The present business will be continued and additions made to accommodate the new branch.

The scarcity of houses has made it impossible for the Olds company to move its entire plant to Lansing. It has made a contract with a Detroit company to build a machine shop on Jefferson avenue, containing 50,000 square feet of space. It is reported that the company will employ 800 men at each of its establishments.

The board of trade of Springfield, Mass., has appointed a committee to endeavor to locate an automobile factory in that town. The business men, it is said, are willing to expend \$50,000 to secure the right kind of enterprise. The committee consists of James H. Bryan, James A. Crane, S. Augustus Allen, Daniel F. Doherty and Charles H. Beals.

H. E. Deloura, of Rochester, N. Y., said to be an experienced automobile man, is in

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Ottumwa, Ia., and there, if he can get sufficient encouragement, will operate a factory for the manufacture of automobiles. This will not take place until spring, however, and in the meantime he will make a machine for Colonel Manchester, a local man of renown and a friend of the promoter.

In a building owned by Col. Michael Jeffers, of Saginaw, Mich., an automobile plant is to be installed by a company which is to be capitalized at something like a quarter of a million. The colonel, who is a local capitalist, has agreed to take some of the stock. Edward Grey, representing Detroit men, is one of the prominent men connected with the enterprise.

The Automobile Marine Power Co. filed articles of incorporation in New Jersey, with an authorized capital of \$150,000, with \$91,500 paid in. The incorporators are Albert L. Kull and William C. French, of Camden, and Edward Pine, of Philadelphia.

G. A. Hosmer Co., capital \$15,000. The object of the new company is to manufacture lubricating oils and bicycle supplies, with its principal place of business in Buffalo. The directors are Oliver Cabana, Giles A. Hosmer and Leon M. Cabana.

Western Automobile Co. of Cleveland, capital stock \$10,000, incorporated by R. M. Owen, Henry J. S. Melcher, Thomas McCauslen, Henry R. Ahrens and W. E. Baldwin.

Consolidated Liquid Air Co., incorporated under New York laws, with headquarters in New York, \$1,000,000, divided into \$5 shares. The company expects to make automobiles and a hundred other things to which power is applied. The shareholders mentioned are Charles E. Tripler, Marion Butler and R. F. Pettigrew, taking thirty-three, thirty-three and thirty-four shares respectively. The directors are former United States Senators P. F. Pettigrew of Sioux Falls, S. D., and Marion Butler of Raleigh, N. C.; Charles E. Tripler, George W. Ballou, St. Charles B. Gwynn and A. M. Miller of New York city; J. Bruvier Patterson, of Philadelphia and H. William Moeller of Newark, N. J.

Prospective Purchasers

W. A. Spencer, of Union Springs, N. Y., sends a request for catalogues which indicates that he is about to make something

in the motorcycle line. Catalogues should be sent him.

Symonds' London Stores, 6 Hatton Garden, London, which disposes of 15,000 bicycles annually, is ready to take the British representation of a motor bicycle.

Thomas Turner & Co., of Wolverhampton, England, are in the market for some small steam motors of American make. These people are large importers of American goods, especially desks.

A. N. Rust, who has long been in the cycle trade on a somewhat extensive basis at Davenport, Ia., has decided to enter the automobile trade and would be glad to receive literature from all makers of complete machines and accessories.

G. A. A. Bennett, of the Universal Trading Co., Birmingham, England, is in the market for motors or other small automobile accessories for sale to the trade.

W. F. D. Crane, of 24 Reynolds terrace, Orange, N. J., is deeply interested in ascertaining the cost of operation and repair of buses used in the public service. He is of opinion that most of the steam vehicles so far made are too frail for his use.

Requests for catalogues indicate that the following are possible buyers of motors: George L. Long, Warsaw, N. Y.; Charles R. Neille, Box 75, Miles, O.; Charles V. Randall (7-horsepower, water cooled), 391 West Santa Clara street, San Jose, Cal.; James Armstrong, 70 Edgewood avenue, Chicago; Frank S. Pearsall, Mineola, L. I.; Mike Leger, Waterloo, Ind.

Among prospective buyers of automobiles are H. R. Clapp, Port Deposit, Mo.; N. K. Shelden, 239 Champion street, Battle Creek, Mich.; C. A. Seymour, Steamboat Springs, Col.; W. L. Stevens (gasoline), 5 Kenwood street, West Somerville, Mass.; House & Herrman, Wheeling, W. Va.; F. W. Thompson, Thompson, Ia.; T. B. Gullefer, Greensburg, Ind.; Henry M. Jackson, Wilmington, Del.; W. F. Roberts, Rupert, Vt.

Communications received from the following indicate that they are prospective buyers of automobile goods of all kinds: Henry Nyberg, Kenosha, Wis.; W. H. Muzzy, Dayton, O.; F. W. Stockbridge, dealer, Paterson, N. J.; F. Hildebrandt, 2505 Elm street, Milwaukee, Wis.; J. Stander, 206 Sunnyside avenue, Brooklyn, N. Y.; W. R. Brown, Marysville, Cal.; Ethan E. Sly, Norwalk, O.; Frank W. Brown, 1210 Harney street, Omaha, Neb.

CYCLE TRADE PROSPECTS ARE BRIGHT

People who encourage the idea that the cycle trade is dead will be surprised, perhaps, to learn that there are still twenty-eight makers turning out goods in large quantities. A year ago the count showed that there were forty-nine who claimed to be ready to make bicycles for the market, and it is true that all, or nearly all of them, did contribute something to the total in 1901. But before the season was very old they commenced to fall away, until twenty-one of them had concluded to drop out of the trade voluntarily or had been forced out by financial disaster. The result is that there are now remaining twenty-seven makers, outside of the American Bicycle Co., with capacities ranging from 3,000 up to five or six times that number. It really appears as if the long-looked clearance had been consummated at last, and that there is an opportunity for those whose business ability and finances have enabled them to stay through the battle to earn the reward to which they are entitled. That fright over the action of the A. B. C. in the bottom bracket matter was responsible for the departure of a great many is undoubtedly true. To that extent the suit has, perhaps, been a good thing for those who remain. It has driven some of the weak sisters to other and, let us hope, easier fields, leaving room for those who remain to do business enough to make it profitable.

The last year has not been prolific in failures. All but about two of the makers who have gone out retired as gracefully as possible, and without leaving unpaid creditors to mourn their loss. The principal failures were those of the Patee company and the March-Davis company. Here is a list of those who have departed since the publication of a list of survivors about a year ago:

Patee Bicycle Co., Indianapolis, failed; Arcade File Works, Anderson, Ind., retired; Remington Arms Co., Ilion, N. Y., retired; Olive Wheel Co., Syracuse, retired; Frontenac Mfg. Co., Syracuse, retired; W. R. Rollins Co., Harvard, Ill., retired; Stanton Mfg. Co., Waltham, Mass.,

retired; Budd Bros. Mfg. Co., Glens Falls, N. Y., retired; Butler Co., Butler, Ind., retired; Thomas Mfg. Co., Springfield, O., retired; Otto Konigslow, Cleveland, retired; Huntington Machine Co., Huntington, Ind., retired; Henley Bicycle Works, Richmond, Ind., retired; Hoffman Bicycle Co., Cleveland, retired; Adirondack Cycle Co., Buffalo, retired; Light Cycle Co., Pottstown, Pa., retired; Trinity Cycle Co., Keene, N. H., retired; Mohawk Cycle Co., Indianapolis, retired; Tillotson & Co., Toledo, retired; Rochester Cycle Mfg. Co., Rochester, retired; March-Davis Cycle Co., Chicago, failed.

The principal makers remaining are the following:

The Leading Cycle Makers

American Bicycle Co., New York.
Andrae, Julius, & Sons Co., Milwaukee.
Arnold, Schwinn & Co., Chicago.
Bretz Cycle Mfg. Co., Syracuse.
—Bean, Chamberlin & Co., Hudson, Mich.
Day Mfg. Co., Lake View, N. Y.
Davis Sewing Machine Co., Dayton, O.
Eagle Bicycle Mfg. Co., Torrington, Conn.
Empire State Cycle Co., Addison, N. Y.
Fraser & Jones, Syracuse.
Gendron Wheel Co., Toledo.
Great Western Mfg. Co., LaPorte, Ind.
Hendee Mfg. Co., Springfield, Mass.
Hengerer, Wm. Co., Buffalo.
Johnson, Iver, Arms & Cycle Works, Fitchburg, Mass.
Keim, John R., Buffalo.
Kirk Mfg. Co., Toledo.
Miami Cycle & Mfg. Co., Middletown, O.
Milwaukee Cycle Co., Milwaukee.
National Sewing Machine Co., Belvidere, Ill.
National Bicycle Mfg. Co., Bay City, Mich.
Pierce, George N. Co., Buffalo.
Snell Cycle Fittings Co., Toledo.
Sherman Cycle Co., Chicago.
Toledo Metal Wheel Co., Toledo.
Warwick Cycle Co., Springfield, Mass.
Wisconsin Wheel Works, Racine Junction, Wis.
Waltham Mfg. Co., Waltham, Mass.

For the purpose of affording the reader and the trade a better understanding of the intentions of the makers they were all invited to contribute to this paper details of their plans for the coming season and to describe their models. The replies of

CYCLE TRADE PROSPECTS ARE BRIGHT.

those who have been heard from are here given. It is likely that others will follow next week:

Toledo Metal Wheel Co.

We are looking for the largest trade in juvenile bicycles that we have yet experienced. We have improved our Favorite line very materially, both in equipment and finish; at the same time, we have materially reduced the selling price. In addition to our regular Favorite line, we are prepared to supply the trade with our new cheap line, which we will call the Cupid, this being put on the market to supply a demand which has been made upon us for several years past, for a bicycle embracing the essential points of high grade wheels, but one which can be retailed at a low price. We intend making this Cupid both with cushion and pneumatic tires, and with spring seat post. These bicycles have taken well, and are being sold by bicycle dealers for holiday trade. We have enjoyed a better holiday trade on juvenile bicycles this year than we have any previous year, which indicates that juvenile bicycles are more of an all year round article now than ever before. Our new catalog will be out in about 60 days.

National Sewing Machine Co.

Our line is fully determined upon, and we are already making delivery of our regular road models, and shall commence delivery of our light weight models within two weeks. Our business will of course be handled on the same lines as in the past; that is, we shall sell direct to legitimate retail dealers only and protect all customers in their territory. The line will be as follows:

Eldredge Special light roadster, 20 and 22-inch frame, 1-inch tubing, outside joints tapered down and "blinded" so as to have practically the appearance of a flush joint, while retaining all the strength of the outside joint; $\frac{3}{4}$ -inch rear forks tapered, and $\frac{5}{8}$ -inch rear stays tapered, eccentric chain adjustment, expander seat-post, $\frac{1}{2}$ -inch or 3-16-inch chain, 22, 24 and 26 tooth front sprockets; all sizes rear sprockets; Thor cranks with special locking device for the crank shaft bearings; Thor hubs, wheels with 36 rear and 32 front spokes, tires $1\frac{1}{2}$, $1\frac{3}{4}$ and $1\frac{1}{2}$ -inch; drop forged narrow fork crown, flush joint parts with ball retainers, Hussey extension handle bar, Brown or Person's saddles; finish black enamel with

the usual nickel parts, rims black and red enamel; weight from 20 $\frac{1}{2}$ to 23 $\frac{1}{2}$ pounds, according to size frame and style of equipment; list, \$50.

Model 45, road wheel men's and women's 22 and 24-inch frame men's and 22 and 24-inch frame women's $1\frac{1}{2}$ -inch tubing, flush joints throughout, $\frac{3}{4}$ -inch rear forks and stays. D section, Eldredge hubs, Thor cranks, special bearing locking device, 3-16-inch chain, expander seat-post, hollow forged arched fork crown, flush head parts, Hussey adjustable handle bar, Sager saddle, 36 rear and 32 front spokes, $1\frac{3}{4}$, $1\frac{1}{2}$ and $1\frac{1}{2}$ -inch tires, weight 22 $\frac{1}{2}$ to 26 lbs, according to size and equipment; finish black enamel with the usual nickel parts, with royal purple rims; list, \$45.

Model 50, men's and women's roadster, $1\frac{1}{2}$ -inch tubing, flush joints throughout; 22-inch and 24-inch frame men's, 20 and 22-inch frame women's, $\frac{3}{4}$ -inch rear forks tapered, $\frac{5}{8}$ -inch rear stays tapered, expander seat-post, Fauber standard cranks, 3-16-inch chain, 26 tooth front sprocket men's and 22-tooth women's, all sizes rear sprockets, 36 spokes rear, 32 front; $1\frac{1}{2}$ -inch and $1\frac{3}{4}$ -inch tires, drop forged fork crown, flush head parts with ball retainers, adjustable handle bar; weight 22 $\frac{1}{2}$ to 26 lbs., depending upon size and equipment; finish, black enamel with usual nickel parts, mahogany rims; list, \$35.

In all of these wheels we are maintaining our own special quality of enamel and nickel work, and in all respects continuing the policy of depending upon high quality rather than low price for our business. While all of the above described bicycles are really new goods, we have adhered closely in all essential points to our designs of 1901, and are of course employing the same material throughout, the reason for this being that our line this season has been so phenomenally successful that we feel fully warranted in following the present designs very closely.

National Manufacturing Co.

Our travelers are on the road. Their proposition is a good one, and so is their line of Nationals. All models will be made with 1-inch tubing frames, listing as follows: Roadsters, \$40; cushion frames, at \$50; racer, at \$50; chainless with cushion frame and coaster brake, at \$75. The chainless cushion frame coaster brake machine is the sim-

CYCLE TRADE PROSPECTS ARE BRIGHT.

plest and most practical on the market. The construction which has proved so satisfactory will be continued, but the new 1-inch tubing model is more attractive than that of 1901, and has many later improvements. The racer has a flush head, small hubs and is up to date in every particular. With road tires, any one can ride it satisfactorily on the road.

Great Western Manufacturing Co.

We are getting out for next year an excellent and complete line, giving much more care to equipment and fine finish. Our line will consist of a 1-inch tube racing machine, weighing 20 pounds, with the highest grade outside connections, Thor hub and hanger, Morse roller chain, highest grade tires, saddles and pedals, listing at \$50.

We are also making a high grade road machine in 1-inch tube, with Thor hubs, Perfection hanger and high grade light road equipment, listing at \$40. We are then making our standard 1½-inch tube light roadster, Adlake, high grade in every respect, listing at \$35, and our large seller, the Crown model, made of 1½-inch, listing at \$25. We also make our high grade juvenile machine in 24-inch wheels, 18-inch frame only, boys and girls, listing at \$25. We will also make a special bicycle which we do not catalogue, a machine for the jobbing trade, flush joint, 1½-inch with one piece hanger, square forged crown, and excellent finish, and in every way a superior bicycle in its class. It is a new feature with us, and so far has met with excellent results and the machine has demonstrated its value very readily.

Miami Cycle & Manufacturing Co.

We will have seven models of the Racycle. All frames will be made of 1-inch tubing, except the Pacemaker, model 70, and our cheapest Racycle roadster, model 74, both of which will be 1½ tubing. All machines, except model 74 will be equipped with Racycle self-oiling pedals, self-oiling hubs and self-oiling crank hanger. All equipment, including saddles, grips, pedals, and tires, will have the word Racycle stamped on them. The list price will remain practically the same as last season, the cheapest Racycle being \$35, the Pacemaker \$60 and our cushion frame coaster brake chainless \$80. We have a new superintendent in the person of Mr. Benj. Hare, formerly superintendent of the Shelby Mfg. Co. Our model numbers

will range from 70 to 79. We expect to do a good business, because we have practically no competition in high grade goods.

Sherman Cycle Co.

We shall continue the manufacture of both Manson and Sherman bicycles. The Manson line will consist of four models, viz.: Model 33, racer, list \$50; original Manson three crown frame, 1½-inch tubing; regular finish, nickeled head, crowns, seat post, and fork-sides and enameled in Manson violet with fancy seat post mast; D. & J. racing hanger and Thor hubs, with choice of tires. Model 32, racer, list \$50; four lug racer, 1-inch tubing, D. & J. racing hanger, Thor hubs, choice of equipment. Model 33, roadster, list \$40; three crown road wheel; Fauber hanger with Manson sprocket, Thor hubs, 1½-inch tubing. Model 31, list \$35; regular road model, 1½-inch tubing, Fauber hanger with Manson sprocket, Thor hubs, Baldwin chain.

The Sherman line will consist of two models, listing at \$40 and \$25, either of which will be furnished in 1-inch tubing if desired. Special effort will be made on our \$25 1-inch machine. We shall also be prepared to furnish the new Sager cushion frame device which will add but \$5 to the list price, and will enable us to supply a good machine with cushion frame and coaster brake, to retail for \$35.

Davis Sewing Machine Co.

We are preparing to pursue a vigorous campaign. With us the outlook is exceedingly bright, and while our sales for 1901 were highly satisfactory, considering the off year, we have every reason to believe that 1902 business will be far in excess of 1901. We are by no means inclined to take a pessimistic view of the situation, and fully believe that the business is on a more legitimate basis than heretofore. With us the past season showed a good demand for the higher-priced models, and indications thus far point to even a better sale on these models than during the season just closed. We are not prepared to go fully into details as to our line at this time, but will say that we are arranging to meet the demands of the widest possible range of trade on strictly high grade goods.

Day Manufacturing Co.

We are very much in the bicycle business, and as our business is on the increase, we

CYCLE TRADE PROSPECTS ARE BRIGHT.

undoubtedly will be permanently engaged in the manufacture of bicycles. We are sending you catalogue, and although it is of last year's issue, our line is similar. We are making no change in them for the coming season whatever.

Waltham Manufacturing Co.

There have been changes of considerable importance in this concern. Mr. Metz having resigned one of the oldest and best men in the cycle trade has taken his place as manager. L. B. Gaylor will be remembered as the man who made the Eagle famous. Then he joined the Black Mfg. Co., and designed the Tribune, one of the best and most famous bicycles this country or any other has ever seen. After the Black concern was sold to the A. B. C. Gaylor resigned, and since that time he has been engaged in experimental work in Connecticut. That Waltham machines will not be allowed to suffer by so thorough a workman may be accepted without question. Concerning the business the company says:

"We will not have photographs and description of our new models ready for about ten days, but will be pleased to furnish you with full particulars at that time. With regard to business policy, we intend to push the sale of our Orient bicycles more vigorously than ever for the coming season, and shall have an exceptionally fine line of wheels to offer our trade. We shall also continue to build motor cycles, and in addition will have a very neat gasoline runabout, which will be much improved for next year, and on which we are expecting a large sale."

Gendron Wheel Co.

The Gendron company will come back into the fold. During the last year or two it has paid little or no attention to the cycle trade. It has an abundance of other goods to look after, and was in the fortunate position of being able to wait until such time as the market seemed to be worth cultivating. The time seems to have arrived. The company writes: "We are pleased to state that the Gendron Wheel Co. is going to continue the manufacture of bicycles. Our plans for 1902 have materialized, and we have already made several contracts for material to cover our season's supply. Next week we intend to start up our bicycle department in order to have a supply of finished

goods on hand when the season opens. While the bicycle business has not been as profitable as in former years, still in connection with our other business it shows a margin of profit. Our catalog is now in the hands of the printers."

The Remington company writes that it is so busy in other lines that it has had no time to devote to the cycle trade, and that it will not manufacture cycles to any extent for the season.

The Thomas Mfg. Co. says that other matters tax the complete equipment of the factory. It has therefore decided to go out of the cycle trade entirely.

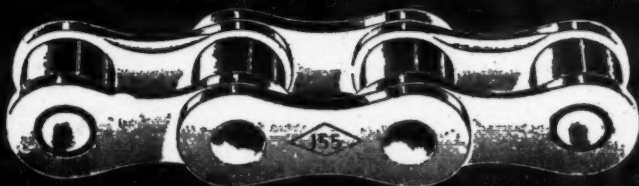
Cycle and Stove Sales Compared

Few people, save those most deeply interested, have any idea of the importance to the cycle trade of the decision recently rendered by the supreme court of Michigan to the effect that cyclists have the right to use the sidewalks. The ruling stands out singly and alone as the only one of its kind in all the years during which cycle litigation has been going on. Going back 15 years, we find that cyclists were contending in the courts that a bicycle was a carriage and as such entitled to all the rights of the road. There are a few backwoods towns where the people have not yet learned that practically every court in the country has agreed with the stand taken by the cyclists at that time. It has been supposed, for the last 10 years at least, that having established their rights, cyclists had burned their bridges behind them and forfeited all expectation of ever being allowed to use the sidewalks.

The circumstances surrounding the Michigan case indicate that the court found itself between two evils and chose the least. Muskegon, formerly one of the best paved cities in the state, is at present in shocking condition so far as its streets are concerned. Until the early part of June of this year cyclists were permitted to use the sidewalks. Then the council passed an ordinance refusing them that right and they carried the matter into courts. It is known that they had little hope of winning, but it was their plan, when an adverse decision should have been rendered, to have taken steps to force the council to put the streets in such shape that they could be safely ridden.

CHAIN TRANSMISSION OF POWER IS SATISFACTORY

ONLY when frictional rivet surface and tensile strength are large in proportion to the working load.



NO. 155 FOR LIGHT RUNABOUTS

Equip your machines with large chains and avoid trouble.
Diamond Chains have large nickel steel hard rivets, are accurate and highly finished.

The Automobile and Cycle Parts Co.

DIAMOND CHAIN FACTORY
INDIANAPOLIS, IND.

THE

Toledo

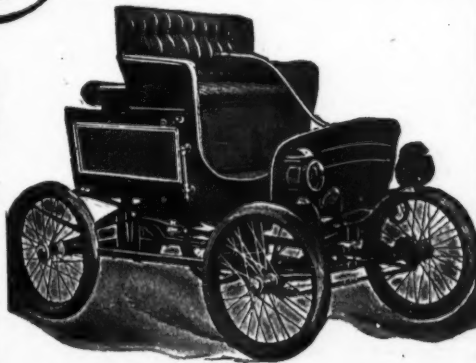
The following vehicles will be shown:

One Model A, Regular, - -	\$ 900.00
One Model B, with Victoria Top, - -	1000.00
One Model C, Surrey, - -	1600.00
One Model D, New Sloping Front, - -	1100.00

Three Model A, each different special finish.

The many special features possessed by Toledos will win for them many admirers at the big show. The Toledo boiler, engine and auxiliary pump will bear critical examination by every one interested in superior construction. Possessing a maximum water and fuel capacity as well as wide mileage radius and wonderful elasticity of power, the Toledo is easily the leader in the steam propelled type of vehicle. Our new Model D, showing a new style sloping front and the specially designed Toledo Surrey will awaken a desire to purchase in the hearts of every visitor. Send for Toledo booklet.—Sent free upon request.

exhibit at the second annual automobile show, Madison Square Garden, New York, will embrace a line of steam carriages never before equaled by any one manufacturer.



AMERICAN BICYCLE COMPANY
AUTOMOBILE DEPARTMENT

Toledo Factory, TOLEDO, OHIO.

New York Branch, 91 Fifth Avenue

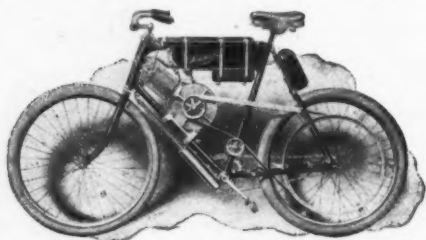
CYCLE TRADE PROSPECTS ARE BRIGHT.

The result of the decision will be that the sale of bicycles will be brisk. There are three people in Muskegon handling bicycles, but practically all of the machines are sold by one of them. Up to June 1 he had disposed of 315, but since that time has made no sales at all but has been dependent on the repair department. He figures that but for the decision recently rendered he might just as well have gone out of the business.

While traveling through the state a week or two ago a gentleman who was formerly a prominent figure in the industry learned one or two facts which interested and surprised him. His business brought him in contact with hardware dealers in a great many cities. One of these dealers happened to remark that his sales of stoves for the year had amounted to \$1,200 and of his bicycles to \$800. After that the visitor made it a point to inquire, of every person he visited, the relative importance of the stove and bicycle departments. The net result shows that the dealers called upon handled, in the aggregate, bicycles to the extent of 70 per cent of the value of their stove sales. No one, surely, will argue that the stove business is a dead issue. Is there any reason, in the face of the showing mentioned, why anything derogatory should be said of the bicycle trade?

A Comparison of Motor Cycles

It is interesting to note some features of American and foreign motoreycles in the way of comparison. There is little question of the superiority of the American machine in the bicycle class though the French racing tricycle is much more speedy

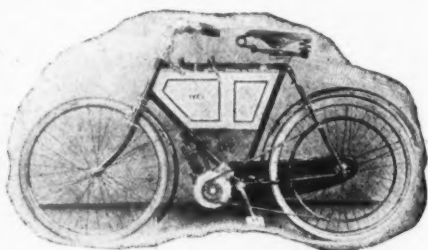


The 1903 Mitchell.

than any of our construction. The tricycle has never, in any form, been favorably received in this country, and it is not surprising that the European makers should outdo us in that class. Many of the French machines are tricycles only in the fact

that they have three wheels. They are simply three-wheeled racing vehicles, one, in particular, having a wheel base of over 5 feet. Many are equipped with multiple cylinder motors, as high as 12 horsepower not being uncommon.

In the bicycle class the conditions are directly opposite, and but few have motors over 1 1-2 horsepower and 2 horsepower is



The Minerva Type.

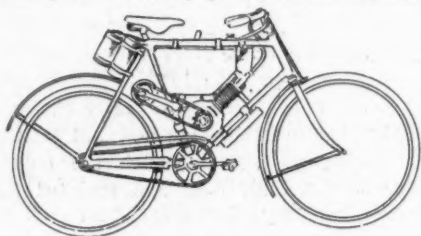
exceptional. The machines most used are the Werner, a French machine with the motor on the front forks directly over the wheel, and the Singer, an English machine, widely known on account of the motor and all accessories being entirely within the rear wheel. Both of these machines are made with drop frames for ladies' use, a point that has not yet been reached in American construction. There are several English machines, almost identical in pattern, all fitted with a small motor called the Minerva which is much smaller than any in general use in this country, and rated at 1 1-4 horsepower.

One of the latest of English the Derby, which differs from these last mentioned principally in that the motor is not directly connected to the rear wheel. Hinged to a clip attached to the seat mast is a bell crank, of large size, the forward arm of which forms a handle which is held in any desired position by means of a ratchet attached to the gasoline tank. The rear arm carries a rubber-shod pulley, grooved to fit over the tire of the rear wheel. This pulley is driven by means of a chain running from a sprocket on the motor shaft. When the handle is pushed forward the pulley is raised from the tire of the wheel, but when the lever is pulled backward it is brought into more or less forcible contact with the tire, according to the position of the handle. The makers, of course, claim that there is no extra wear on the tire, but most American riders

would "have to be shown." The motor of this machine is rated at 1 horsepower.

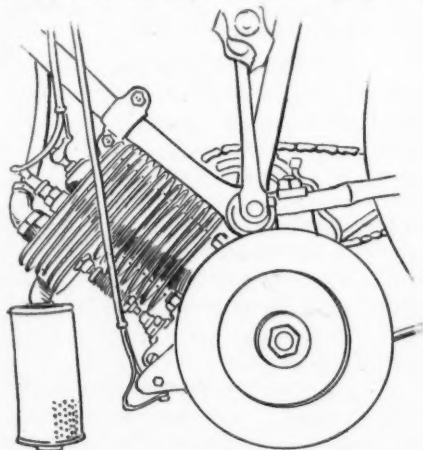
In France but little attention has been given to the two-wheelers, the Werner being the only one of any prominence, though the Chapelle is rapidly coming to the front and there are several machines of local reputation.

Italy has recently joined the ranks with



The Derby.

a machine called the Lilliput manufactured by Rosselli, of Turin. In this machine the engine is secured to the lower or frame tube, much lower than is commonly the case, and is made in two sizes, 1 and 2 horsepower respectively. The valve chamber is placed on a line perpendicular to the axle, instead of at the side of the crank box in the usual position. The fly wheel is outside the case and the muffler is suspended directly from the engine. The



The Italian "Lilliput."

power transmission is by a round, twisted belt running direct to a sheave on the rear wheel.

In remarkable contradistinction from these light-powered machines are our powerful roadsters such as the Mitchell and Orient, with motors of from 2 to 31-2 horsepower. Albert Champion is riding an Orient with a 41-2 horsepower Aster

TO THE READER:

If you make anything at all in the automobile line, no matter how small, you are requested to notify us of the fact that your name and a list of the articles you manufacture may be included in our Second Annual Directory, which will form part of our Christmas number. There will be no charge for insertion of the information.

If you are a subscriber to MOTOR AGE you will receive a copy of the issue on or about Dec. 20, without extra charge. If you are not and require one, the cheapest way to get it is to send Two Dollars for a subscription. The directory alone will cost \$1.00

MOTOR AGE,
Monon Building, - CHICAGO

CYCLE SPORT AND TRADE.

motor, and at the New York show there was a machine, made by the Motor Cycle Mfg. Co., equipped with a motor that was stated to be 6 horsepower.

While the Thomas, Merkel and several others are not fitted with as large or as heavy motors as the others mentioned, they have all demonstrated their ability to negotiate the American roads and are no doubt more powerful than any of the commonly known European machines. It is gratifying to state that a prominent English firm has placed an initial order for 150 Mitchell machines which have been received with favor by the English trade and press.

Thirty-Two Motor Cycles Raced

An important event which was prevented from taking place on the road near Paris as in previous years, was run over a course of 100 kilometers, about 62 miles, on the Prince track, Paris, on October 24. Its result was most gratifying, as out of thirty-two starters fifteen covered the distance in less than 3 hours. There were three classes, one in which pedaling was not allowed, an other in which it was and a third for machines weighing less than 30 kilos, or 66 pounds. Three of the starters used alcohol. From the start Cissac, on a Chapelle, without pedaling, took the lead, and without the slightest hitch went at record speed, passing and again passing his competitors. He broke every motor bicycle record and covered 63 kilometers, 770 meters, or about 39 miles 1,150 yards in the hour; 50 kilometers in 46:51 4-5, and the 100 kilometers in 1:34:25 1-5. The second man, Barrett, was over 21 minutes behind. The Chapelle firm won the prize offered to the concern whose three motor bicycles would together make the best time. This firm had the winner, the third and twelfth man. The only competitor who might have had a claim of being classified among the three first is Rivierre, who was fourth, and just gaining, when suddenly his motor became deranged, about 5 minutes before the finish.

Cold Day at Vailsburg

New York, Nov. 10.—Cold winds kept down the attendance at the wind-up of the season's racing at Vailsburg to-day to a thousand spectators, who watched a half a hundred hardy racing amateurs and profes-

sionals in a series of lively bicycle contests. Heavy overcoats were the order of the day in the stands and thick sweaters and stockings prevailed on the track. The half mile open for the money chasers was run with three semi-finals of two men each. In these Nat Butler outrode Jed Newkirk, Howard Freeman defeated Lester Wilson, and Frank Kramer outclassed Ben Monroe. Of course the champion won the final. Freeman captured the sleigh ride from Butler and with it second money. The 10-mile professional handicap was marked by a pretty chase of 6 miles before John King and Nat Butler, alternating pace, could catch the bunch. King was a limit man and sprinted the intervening 60 yards between him and the scratch men. Butler was none too fast in getting away and Kramer quit when he saw he was to have no partner in the chase after the long markers. There was a merry sprint for second money, in which Floyd Krebs (200) again surprised the cracks by beating them in the stretch. Freeman (100) was third and Newkirk (200) fourth. The time was 27:25.

The mile amateur handicap panned out one of the prettiest and fastest races of the season. Schlee (40) won in 2:03 2-5, with Billington (scratch) second and Glasson (40) third.

Michael's Greatest Race

The match of one hour between Michael and Bouhours, the Frenchman, which took place on Oct. 27 on the Prince's track of Paris, as already reported by cablegram, was one of the most thrilling and, from Michael's own words, one of the hardest he ever rode. Fifteen thousand people crowded the amphitheater and never ceased to make such noise that it was heard several miles distant. The first half hour passed without a hitch, but during the second part of the race many incidents happened, such as tandem stops, breaking of chains, etc., which prevented the midget from breaking the world's hour race, although he had broken nearly every kilometer and mile record during the first half hour. The first kilometer was covered in 1 m. 7 3-5 s. standing start, breaking the former record by two-fifths of a second. As usual, Michael made a fine start and immediately gained about 30 meters and although Bouhours did his best he lost at every lap. A little after the tenth kilometer Bouhours was

lapped. One of Bouhours' tires punctured and by the time he had changed machines he had lost nearly another lap. However, he did not show discouragement and amidst wild cheering was even gaining. A bad pick-up of Michael, in which he remained for a while without pace, enabled the Frenchman to gain almost a lap and a half and at the twentieth kilometer, which was made in 16 seconds less than the old record, only 150 meters separated the champions, but as soon as Michael was again behind his tandem the speed was still increased and for a while the speed showed nearly 46 miles to the hour. By and by Michael again lapped the Frenchman while the latter's tandem was in trouble. The race was over on Bouhours' side, but it did not take long before trouble began for Michael. The chain of the tandem broke and for nearly three laps he rode without pace and when again picked up there was no more chance for breaking the hour record. Michael had the consolation of equaling the French hour record, 64 kilometers 350 meters, or nearly forty miles. Bouhours was seven and one-half laps behind. The last mile, it is said, was covered in 1 m. 20 s., which would break Taylor's record by 2 2-5 seconds.

Foreign Riders En Route

New York, Nov. 10.—P. T. Powers, one of the managers of the six-day bicycle race at Madison Square Garden, was notified by cable from Floyd McFarland yesterday that the foreign flyers who will compete in this year's struggle sailed for New York on the St. Paul. The teams are as follows: Gougoltz and Simar, France; Chevallier and Fisher, Switzerland; Muller and Le Poutre, De Roeck and Kerff, Belgium; and Frederick and Jaak, Germany. The riders are accompanied by Victor Breyer, editor of *Le Velo*. This contingent of continental cyclists is the most formidable that has ever taken part in the race. Some of the pedalers who sailed are already well known on this side. Gougoltz and Simar were only a lap behind the winners last year. Fisher and Chevallier took part in the 1899 race and created the sensation of the week by stealing the only lap of the race that was gained in that fashion by furious, well-timed spurts that killed off one after the other of the opposing riders. Muller rode here before, but was handicapped by a poor partner.

Cycle Makers Tried for

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Before they were able to make a machine as light as those of to-day and guarantee them as comfortable and reliable. The

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CYCLE SPORT AND TRADE.

This year he has as mate one of the best distance men abroad, Le Poutre, who is no stranger to the six-day grind either, having on several occasions astounded Europe by his wonderful stamina. Frederick, who has also frequently ridden in this country, is likewise better equipped with a partner than he has ever been heretofore. De Roock and Kerff, who will wear the Belgian colors, are said by McFarland to be a dangerous team. The riders will reach here the latter part of the week, and as the race does not start until Dec. 9, they will have three full weeks to condition themselves.

A Saddle for Motorcycles

Since the introduction of motor cycles much attention has been given to the question of a comfortable saddle, the patterns previously in common use being inadequate to the changed conditions. The one thing that made the modern bicycle saddle even tolerable was the small proportion of the rider's weight carried upon it, the greater part being carried on the pedals and no small proportion on the handle-bars. In the case of the motor cycle these conditions are greatly altered. The rider generally sits nearly upright and having no pedalling to do, almost the entire weight is on the saddle.

The first designs presented were naturally mere enlargements of the padded saddles with which the cycling public was already familiar and many now in use have lost all semblance to the original pattern, the width being considerably in excess of the length.

The French designers are inclined to be extremists. At the Chicago show, last spring, was a tricycle fitted with a saddle strongly resembling a Turkish chair. Now Louis Lallement, of Paris, has designed a saddle, or more properly, a seat, comprising a frame of flat steel springs over which is a padded cover upholstered with leather. A back rest is provided and is so attached to the seat portion that it may be swung backward and downward when not wanted as a rest and may be swung back in position without dismounting, the arrangement being such that it is automatically locked in position.

Miller Forsakes Cycle Racing

Charles W. Miller, the long-distance cyclist, has returned to Chicago after having turned his back on cycling, as he says,

for all time. It was his intention to take part in the 6-day race at Madison Square Garden this winter, but he found the management unwilling to offer any inducement other than the prizes, which he does not consider worth the risk in the matter of expense or the labor involved. Miller has had a great deal of experience with automobiles of the gasoline variety in Europe and would like to secure a position, as salesman or demonstrator, in some American establishment.

The line of bicycle goods manufactured by E. T. Harris, Chicago, is becoming larger each season and the demand for each class seems to be increasing. His adjustable repair cones, hexagon nut and axles are all standard in size and thread and reliable. The Harris hubs are now so well known that no jobbing line is complete without them. This line includes bicycle hubs, tandem, double sprocket and standard, sulky hubs and this season a well-proportioned and attractive vehicle hub, for bicycles, wagons, runabouts and light automobiles. Mr. Harris is glad to answer all inquiries and has facilities for promptly supplying all demands. His address is E. T. Harris, 531-545 West Fifteenth street, Chicago.

The specially-called meeting of stockholders of the American Bicycle Co. occurred at Jersey City on Oct. 30. The stock was reduced from \$80,000,000 to \$26,996,400, of which \$9,294,000 is preferred. The actual reduction, of course, was small, only \$30,000,000 worth of the stock ever having been issued.

Arthur Chase, the cranky little English rider who came to this country in 1898 but returned without accomplishing a great deal, has just made a remarkable record at the Crystal Palace track. He rode 108 miles 1,026 yards in 3 hours and established new records from 51 miles upward.

The Jenner Cycle Co., of Evansville, Ind., has been incorporated with a capital of \$10,000 to deal in and repair cycles and automobiles. Jacob W. Jenner is president, W. H. Jenner secretary and A. H. Jenner treasurer.

Edward R. Clark will continue the business formerly carried on by Clark & Sabin, at Springfield, Mass., the partnership having been dissolved.

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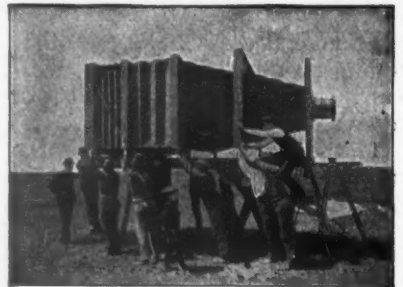
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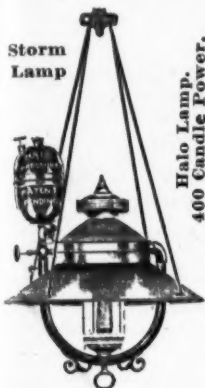


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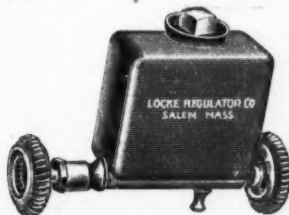
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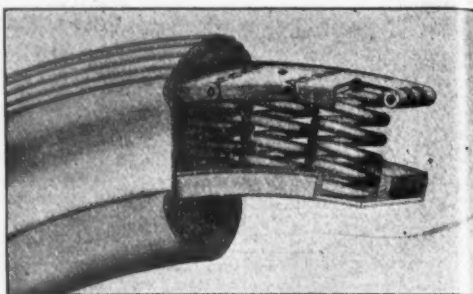
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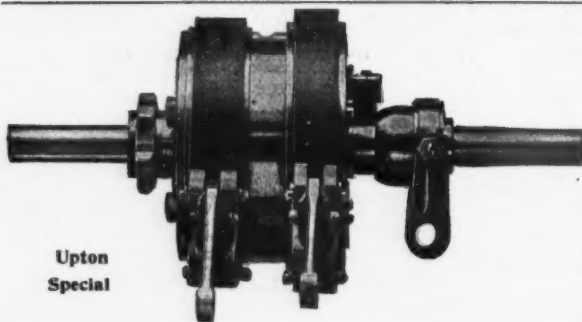


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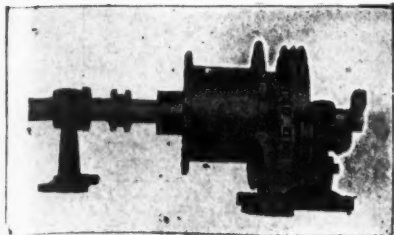
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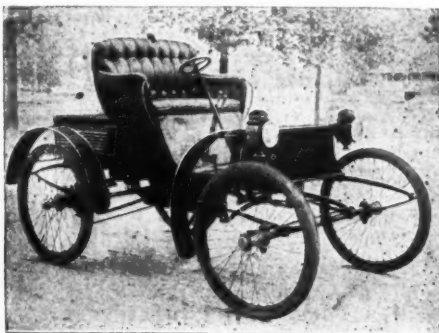
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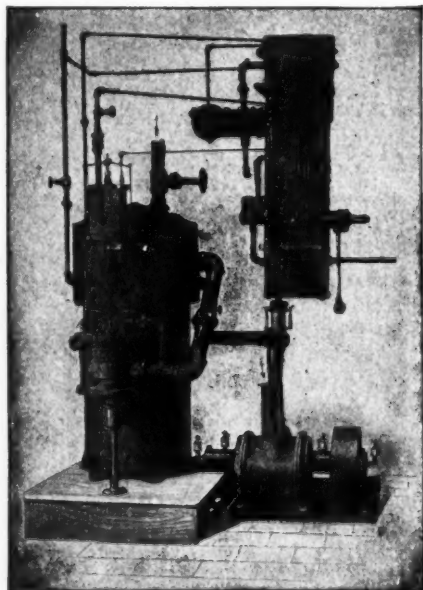
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